

VPDES PERMIT FACT SHEET

This document gives pertinent information concerning the reissuance of the VPDES permit listed below. This permit is being processed as a Major, Municipal permit. The effluent limitations contained in this permit will maintain the Water Quality Standards (WQS) of 9VAC25-260. The discharge will result from the operation of a municipal sewage treatment plant (SIC Code: 4952 - Sewerage Systems). This permit action consists of reissuing the permit with revisions to the permit, as needed, due to changes in applicable laws, guidance, and available technical information.

1. Facility Name and Address:
Waynesboro WWTP
941 Fir Street
Waynesboro, VA 22980
Location: 930 Essex Avenue
2. Permit No. VA0025151; Expiration Date: January 31, 2015

3. Owner: City of Waynesboro
Contact Name: Mr. Troy Eppard
Title: Chief Operator
Telephone No: (540) 241-2379
Email: eppardta@ci.waynesboro.va.us

4. Description of Treatment Works Treating Domestic Sewage:
Total Number of Outfalls: 1

Waynesboro WWTP primarily receives sewage wastewater generated by residents and businesses in the City of Waynesboro and surrounding Augusta County with the balance of the flow generated by commercial and industrial contributors (see permit reissuance application Form 2A, Part F). The WWTP has an approved Industrial Pretreatment Program for regulating the non-domestic contributors' wastewater quality. The treatment units comprising the recently upgraded WWTP are shown in the schematics included in the permit reissuance application.

Average Discharge Flow (Sept 2010 – Feb. 2014) = 2.393 MGD
Design Average Flow = 6.0 MGD

5. Application Complete Date: August 15, 2014

Permit Writer: Bev Carver	Date: September 12, 2014
Reviewed By: Dawn Jeffries	Date: September 15, 2014

Public Comment Period: October 23, 2014 to November 22, 2014

6. Receiving Stream Name: South River
River Mile: Outfall 002 (23.18)
Use Impairment: Yes
Special Standards: pH
Tidal Waters: No
Watershed Name: VAV – B58R Lower South River
Basin: Potomac; Subbasin: Shenandoah
Section: 3; Class: IV
7. Operator License Requirements per 9VAC25-31-200.C: Class I

Fact Sheet – VPDES Permit No. VA0025151 – Waynesboro WWTP

8. Reliability Class per 9VAC25-790: Class II (assigned October 29, 2009)
9. Permit Characterization:
☐ Private ☐ Federal ☐ State ☒ POTW ☐ PVOTW
☐ Possible Interstate Effect ☐ Interim Limits in Other Document (attach copy of CSO)

10. Discharge Location Description and Receiving Waters Information: Appendix A

11. Antidegradation (AD) Review & Comments per 9VAC25-260-30:
Tier Designation: Tier 1

The State Water Control Board's WQS include an AD policy. All state surface waters are provided one of three levels of AD protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 waters have water quality that is better than the WQS. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 waters are exceptional waters and are so designated by regulatory amendment. The AD policy prohibits new or expanded discharges into exceptional waters.

The AD review begins with a Tier determination. South River downstream of the facility discharge location is determined to be Tier 1 because the stream does not meet the General Standard (Benthics) for aquatic life use. AD baselines are not calculated for Tier 1 waters.

12. Site Inspection: Performed by Bev Carver on April 14, 2014

13. Effluent Screening and Effluent Limitations: Appendix B

14. Effluent toxicity testing requirements included per 9VAC25-31-220.D: ☒ Yes ☐ No

15. Biosolids Management Plan (BSMP): The VPDES Sewage Sludge Permit application serves as the BSMP and will be approved with the reissuance of the permit. Sewage sludge utilization and disposal options include the following:

- land application of biosolids by Houff's Feed and Fertilizer, Co. under the coverage of Permit No. VPA01566, VPA01580, and VPA01581
- transport of dewatered sludge to the Augusta County Regional Landfill

The permittee indicated in an email on September 22, 2014 that 329.1 dry metric tons of biosolids were produced in 2013.

16. Bases for Special Conditions: Appendix C

17. Material Storage per 9VAC25-31-280.B.2: This permit requires that the facility's O&M Manual include information to address the management of wastes, fluids, and pollutants which may be present at the facility, to avoid unauthorized discharge of such materials.

18. Antibacksliding Review per 9VAC25-31-220.L: This permit complies with the antibacksliding provisions of the VPDES Permit Regulation.

Fact Sheet – VPDES Permit No. VA0025151 – Waynesboro WWTP

19. Impaired Use Status Evaluation per 9VAC25-31-220.D: The South River in the vicinity of the discharge is listed as not meeting the General Standard (Benthics) for aquatic life use. This section of river is also listed as having elevated levels of coliform bacteria and phosphorus and as having a fish consumption advisory due to the documented presence of mercury in fish.

TMDLs addressing these local impairments include the following WLAs for this discharge:

- a. Mercury – The mercury TMDL for the South River was approved by EPA on June 3, 2010. This facility was assigned a WLA in the Mercury TMDL of 31 grams/year based on a design flow of 6.0 MGD and a target concentration of 3.8 ng/L. This allocation is being addressed in the permit through a special condition for mercury monitoring and minimization.
- b. E. coli – The South River Watershed Bacterial and Benthic TMDL was approved by EPA on December 3, 2009. This facility was assigned an E. coli WLA of 1.04×10^{13} cfu/yr based on a design flow of 6.0 MGD and a concentration of 126 cfu/100mL.
- c. Total Phosphorus (TP) – The South River Watershed Bacterial and Benthic TMDL was approved by EPA on December 3, 2009. This facility was assigned a TP WLA of 1657.9 kg/yr based on a design flow of 4.0 MGD and a TP concentration of 0.3 mg/L. The WLA of 1657.9 kg/yr converts to lb/year as follows:

$$(1\text{kg}/2.20462\text{ lb})(1657.9\text{ kg}/\text{X lb})$$
$$\text{X} = 3655.0\text{ lb/year}$$

- d. Sediment – The South River Watershed Bacterial and Benthic TMDL was approved by EPA on December 3, 2009. This facility was assigned a Sediment WLA of 248 Metric Tons/year based on a design flow of 6.0 MGD and a TSS concentration of 30 mg/L.

The Chesapeake Bay TMDL (December 29, 2010) specifies WLAs for Total Nitrogen (TN), TP, and sediment that resulted from EPA's evaluation of the jurisdictions' final Phase I WIPs as described in Section 8 of the TMDL. Table 9-4 of Appendix Q of the TMDL contains the following WLAs for this discharge:

- a. TN – A WLA of 48,729 lb/year is specified for this facility based on a design flow of 4.0 MGD and a concentration of 4.0 mg/L. This WLA is the same as the WLA specified for TN for this facility in the Registration List as part of the Nutrient General Permit Regulation at 9VAC25-820-70.
- b. TP – A WLA of 3,655 lb/year is specified for this facility based on a flow of 4.0 MGD and a concentration of 0.3 mg/L. This WLA is the same as the WLA specified for TP for this facility in the Registration List as part of the Nutrient General Permit Regulation at 9VAC25-820-70.
- c. TSS – A WLA of 365,467 lb/year is specified for this facility based on a flow of 4.0 MGD and a monthly average TSS concentration of 30 mg/L.

20. Regulation of Users per 9VAC25-31-280.B.9: N/A – This facility is owned by a municipality.

21. Stormwater Management per 9VAC25-31-120: Application Required? ☒ Yes ☐ No
The permittee submitted an updated No Exposure Certification (NEC) Form with their application that indicates there are no industrial activities or materials exposed to stormwater discharged from the property. No Exposure Certification is approved as part of the permit reissuance. No stormwater requirements have been included in the permit.

Fact Sheet – VPDES Permit No. VA0025151 – Waynesboro WWTP

22. Compliance Schedule per 9VAC25-31-250: There are no compliance schedules included in the reissued permit.
23. Variances/Alternative Limits or Conditions per 9VAC25-31-280.B, 100.K, and 100.N: None.
24. Financial Assurance Applicability per 9VAC25-650-10: N/A – This facility is owned by a municipality.
25. Virginia Environmental Excellence Program (VEEP) Evaluation per § 10.1-1187.1-7: At the time of this reissuance, is this facility considered by DEQ to be a participant in the Virginia Environmental Excellence Program in good standing at either the Exemplary Environmental Enterprise (E3) level or the Extraordinary Environmental Enterprise (E4) level? ☐ Yes ☒ No
26. Nutrient Trading Regulation per 9VAC25-820: See Appendix B
General Permit Required: ☒ Yes ☐ No
27. Nutrient monitoring included per Guidance Memorandum No. 14-2011: ☐ Yes ☒ No

This facility is a Significant Discharger as defined in the Nutrient Trading Watershed General Permit (WGP) Regulation 9VAC 5-820 and is actively monitoring and reporting under the WGP. This facility does not have any outfalls that discharge solely stormwater exposed to industrial activity.

28. Threatened and Endangered (T&E) Species Screening per 9VAC25-260-20 B.8: Because this is not an issuance that allows increased discharge flows, nor was a review requested, T&E screening is not required.
29. Public Notice Information per 9VAC25-31-280.B: All pertinent information is on file, and may be inspected and copied by contacting Bev Carver at: DEQ-Valley Regional Office, P.O. Box 3000, Harrisonburg, Virginia 22801, Telephone No. (540) 574-7805, Beverley.carver@deq.virginia.gov.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing if public response is significant. Requests for public hearings shall state the reason why a hearing is requested, the nature of the issues proposed to be raised in the public hearing and a brief explanation of how the requester's interests would be directly and adversely affected by the proposed permit action. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given.

30. Historical Record:
- a. In 1979 a CTO was issued for the 4.0 MGD facility.
 - b. In 1999 the permit was reissued with a design average flow = 4.0 MGD.
 - c. In 2001 the permit was modified to include biosolids land application requirements.
 - d. In 2004 the permit was reissued with a design average flow = 4.0 MGD
 - e. In 2006 the permit was modified to include an expansion discharge flow tier of 6.0 MGD.
 - f. Waynesboro completed a substantial upgrade and expansion of the WWTP from 4.0 MGD to 6.0 MGD. A preliminary CTO was issued on August 20, 2010 and a revised CTO was issued on November 8, 2010.
 - g. In September 2010, Waynesboro began discharging through a new Outfall 002. Outfall 001 was taken out of service.

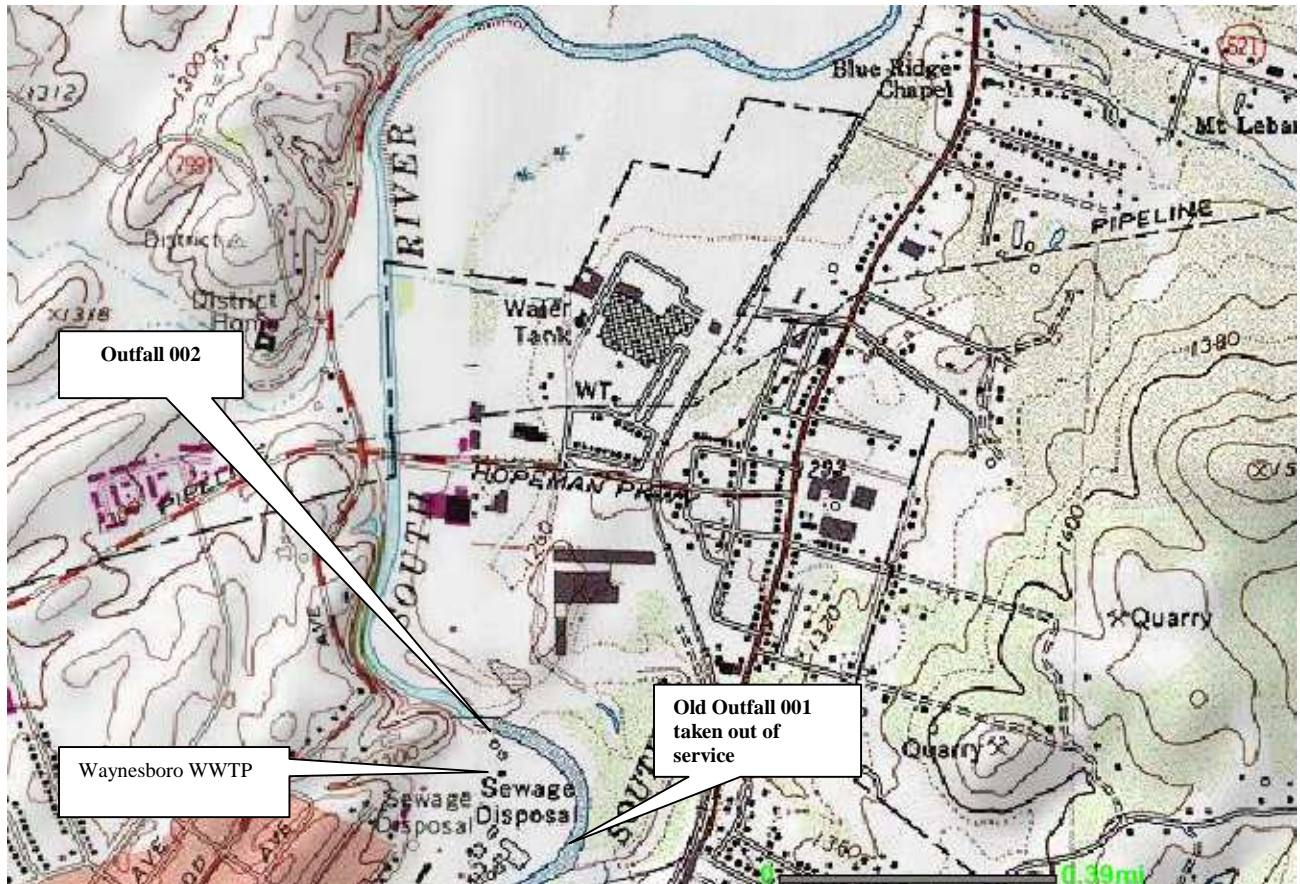
Fact Sheet – VPDES Permit No. VA0025151 – Waynesboro WWTP

- h. Waynesboro notified DEQ in a letter dated January 4, 2011 that they were in compliance with the final TP TMDL limits.
- i. A Consent Special Order was issued to the City of Waynesboro on June 24, 2010. Most of the items required in the Order have been completed with the exception of completion of I & I corrective actions.
- j. A Closure Plan for the old WWTP was submitted on September 29, 2010.

APPENDIX A

DISCHARGE LOCATION AND RECEIVING WATERS INFORMATION

Waynesboro WWTP discharges to the South River in Augusta County. The topographical map below shows the location of the treatment facility and Outfall 002. When the facility was upgraded and expanded from 4.0 MGD to 6.0 MGD in November 2010, the old Outfall 001 was taken out of service.



Fact Sheet – VPDES Permit No. VA0025151 – Waynesboro WWTP

PLANNING INFORMATION

Relevant points of interest within the watershed and in the vicinity of the discharge are shown on the Water Quality Assessments Review table below.

WATER QUALITY ASSESSMENTS REVIEW						
POTOMAC-SHENANDOAH RIVER BASIN						
7/30/2014						
IMPAIRED SEGMENTS						
SEGMENT ID	STREAM	SEGMENT START	SEGMENT END	SEGMENT LENGTH	PARAMETER	
B32R-02-HG	South River/NF Shenandoah/SF Shenandoah	163.27	8.16	155.11	Mercury in Fish Tissue	
B32R-02-BAC	South River	39.74	0.00	39.74	E-coli, Fecal Coliform	
B32R-01-BEN	South River	29.58	0.00	29.58	Benthic	
PERMITS						
PERMIT	FACILITY	STREAM	RIVER MILE	LAT	LONG	WBID
VA0025151	Waynesboro WWTP	South River	23.18	380459	785228	VAV-B32R
VA0002160	INVISTA - Waynesboro 001	South River	25.30	380340	785312	VAV-B32R
VA0002160	INVISTA - Waynesboro 011	South River	25.17	380344	785302	VAV-B32R
VA0002402	Former Genicom - Waynesboro Facility	South River	21.94	380534	785238	VAV-B32R
VA0028037	Skyline Swannanoa STP	South River X Trib	2.96	380200	785207	VAV-B32R
VA0088226	Hugh K Cassell Elementary School	Porterfield Run X-Trib	0.33	380749	785204	VAV-B32R
MONITORING STATIONS						
STREAM	NAME	RIVER MILE	RECORD	LAT	LONG	
South River	1BSTH017.55	17.55	8/6/2007	380741	785151	
South River	1BSTH018.47	18.47	8/6/2007	380652	785145	
South River	1BSTH018.73	18.73	9/12/2007	380644	785146	
South River	1BSTH019.10	19.1	7/1/2007	380622	785154	
South River	1BSTH019.26	19.26	9/23/1999	380640	785146	
South River	1BSTH019.41	19.41	8/2/2007	380617	785158	
South River	1BSTH019.52	19.52	11/14/2001	380627	785145	
South River	1BSTH020.54	20.54	7/1/2007	380548	785155	
South River	1BSTH021.49	21.49	7/1/2007	380535	785239	
South River	1BSTH021.68	21.68	7/1/2007	380519	785237	
South River	1BSTH021.97	21.97	8/21/2003	380520	785238	
South River	1BSTH022.03	22.03	8/21/2003	380523	785238	
South River	1BSTH022.09	22.09	7/30/2002	380526	785237	
South River	1BSTH022.15	22.15	8/21/2003	380529	785238	
South River	1BSTH022.19	22.19	7/1/1997	380519	785237	
South River	1BSTH022.21	22.21	8/21/2003	380532	785238	
South River	1BSTH022.29	22.29	7/30/2002	380516	785237	
South River	1BSTH022.31	22.31	8/7/2007	380500	785224	
South River	1BSTH023.03	23.03	8/7/2003	380437	785249	
South River	1BSTH023.73	23.73	7/1/1997	380454	785220	
South River	1BSTH024.70	24.7	7/7/1968	380410	785307	
South River	1BSTH024.90	24.9	8/21/2003	380357	785304	
South River	1BSTH024.97	24.97	11/6/2001	380400	785304	
South River	1BSTH025.10	25.1	8/21/2003	380348	785305	
South River	1BSTH025.61	25.61	1/29/2004	380333	785326	
South River	1BSTH025.83	25.83	7/1/1997	380337	785342	
South River	1BSTH026.73	26.73	11/6/2001	380352	785426	
South River	1BSTH027.85	27.85	5/17/1974	380324	785428	
South River	1BSTH031.45	31.45	1/20/2009	380247	785633	
South River	1BSTH024.80	24.8	8/21/2003	380302	785305	
South River	1BSTH024.96	24.96	11/6/2001	380402	785304	
South River X-Trib	1BXDH000.10	0.1	11/9/1999	380807	785045	
South River	1BSTH029.45	29.85	9/20/1967	380251	785516	
South River	1BSTH021.59	21.59	10/02/98	380520	785237	
South River	1BSTH027.08	27.08	10/02/98	380324	785428	
PUBLIC WATER SUPPLY INTAKES						
OWNER	STREAM	RIVER MILE				
None						
WATER QUALITY MANAGEMENT PLANNING REGULATION						
Is this discharge addressed in the WQMP regulation? Yes						
If Yes, what effluent limitations or restrictions does the WQMP regulation impose on this discharge?						
PARAMETER	ALLOCATION					
CBOD	227 kg/d (Nov-May); 113.6 kg/d (Jun-Oct)					
Nutrients under the Watershed General Permit						
WATERSHED NAME						
VAV-B32R South River						

Fact Sheet – VPDES Permit No. VA0025151 – Waynesboro WWTP

FLOW FREQUENCY DETERMINATION:

The Waynesboro WWTP discharges to the South River near Waynesboro, VA. Stream flow frequencies are required to develop permit limits for the 2015 VPDES permit reissuance for this discharge. A Certificate to Operate was issued on November 8, 2010 for the 6.0 MGD facility which discharges through a new Outfall 002 located 2000 feet downstream of the old Outfall 001. Outfall 001 is no longer in service. Due to the close proximity of the new Outfall 002 to the old Outfall 001, the drainage area of 143 mi² for the old Outfall 001 was carried forward.

The VDEQ has operated a continuous record gage (#01626000) on the South River, in Waynesboro, from 1952 to the present. The gage is located at the Route 664 bridge in Waynesboro, approximately 0.5 miles from I-64. The flow frequencies at the discharge point were determined by using the values at the gage and adjusting them by proportional drainage areas as shown below:

South River at Route 664 near Waynesboro, VA (#01626000):

Drainage Area = 127 mi²

1Q30 = 19 cfs	High Flow 1Q10 = 33 cfs
1Q10 = 22.1 cfs	High Flow 7Q10 = 36.2 cfs
7Q10 = 23.4 cfs	High Flow 30Q10 = 43.6 cfs
30Q10 = 25.1 cfs	Harmonic Mean = 66.6 cfs
30Q5 = 27.3 cfs	

South River at Waynesboro WWTP Outfall 002 without upstream dischargers:

Drainage Area = 143 mi²

1Q30 = 21.4 cfs	13.8 MGD	High Flow 1Q10 = 37.2 cfs	24.0 MGD
1Q10 = 24.9 cfs	16.1 MGD	High Flow 7Q10 = 40.8 cfs	26.4 MGD
7Q10 = 26.3 cfs	17.0 MGD	High Flow 30Q10 = 49.1 cfs	31.7 MGD
30Q10 = 28.3 cfs	18.3 MGD	Harmonic Mean = 75.0 cfs	48.5 MGD
30Q5 = 30.7 cfs	19.8 MGD		

There are 2 discharges that enter the South River below the gage, but upstream of Outfall 002.

1. Baker Spring – Water is withdrawn from Baker Spring and used as production water by INVISTA in Waynesboro (VA0002160). The water from Baker Spring that is not used for production overflows to the South River through the Outfall 001 discharge pipe downstream of the monitoring point. In the past, the Baker Spring overflow was estimated as 2.27 cfs (1.47 MGD). In the May 2012 permit application, INVISTA reported an updated Baker Spring overflow of 5.70 cfs (3.68 MGD).
2. INVISTA discharges to the South River through Outfalls 001, 002, 003, 004, 005, 006, 008, 011, 012 and 013. Outfalls 009 and 010 discharge to South River, UT. The main outfalls are Outfall 001 and 011. All outfalls are intermittent except 001, 003 and 011. The long term average flow reported in the May 2012 application for Outfall 001 was 3.71 MGD. For Outfall 011, the long term average flow reported was 0.40 MGD. If all of the outfalls are taken into consideration, the discharge flow of 4.5 MGD for INVISTA is believed reasonable to carry forward in this flow frequency determination.

Fact Sheet – VPDES Permit No. VA0025151 – Waynesboro WWTP

These 2 discharges were added to the stream flows calculated at Outfall 002 as shown below:

Discharges between gage and Outfall 002:

Baker Spring overflow = 3.68 MGD

INVISTA Waynesboro = 4.5 MGD

South River at Waynesboro WWTP Outfall 002 including upstream dischargers

1Q30 =	$13.8 + 3.68 + 4.5 =$	22.0 MGD
1Q10 =	$16.1 + 3.68 + 4.5 =$	24.3 MGD
7Q10 =	$17.0 + 3.68 + 4.5 =$	25.2 MGD
30Q10 =	$18.3 + 3.68 + 4.5 =$	26.5 MGD
30Q5 =	$19.8 + 3.68 + 4.5 =$	28.0 MGD
High Flow 1Q10 =	$24.0 + 3.68 + 4.5 =$	32.2 MGD
High Flow 7Q10 =	$26.4 + 3.68 + 4.5 =$	34.6 MGD
High Flow 30Q10 =	$31.7 + 3.68 + 4.5 =$	39.9 MGD
Harmonic Mean =	$48.5 + 3.68 + 4.5 =$	56.7 MGD

The high flow months are January through May.

Peer Reviewer: JRD

Date: April 1, 2014

Fact Sheet – VPDES Permit No. VA0025151 – Waynesboro WWTP

EFFLUENT/STREAM MIXING EVALUATION

Mixing zone predictions were made with the Virginia DEQ Mixing Zone Analysis Version 2.1 program. The predictions are based on the discharge and receiving stream characteristics, and are presented below.

6.0 MGD Annual (June – December) Mix	6.0 MGD Wet Season (January – May) Mix
Stream 7Q10 = 25.2 MGD Stream 30Q10 = 26.5 MGD Stream 1Q10 = 24.3 MGD Stream slope = 0.0007 ft/ft Stream width = 42 ft Bottom scale = 3 Channel scale = 1 Mixing Zone Predictions @ 7Q10 Depth = 2.0904 ft Length = 855.33 ft Velocity = .55 ft/sec Residence Time = .018 days Recommendation: A complete mix assumption is appropriate for this situation and the entire 7Q10 may be used. Mixing Zone Predictions @ 30Q10 Depth = 2.1444 ft Length = 835.96 ft Velocity = .5586 ft/sec Residence Time = .0173 days Recommendation: A complete mix assumption is appropriate for this situation and the entire 30Q10 may be used. Mixing Zone Predictions @ 1Q10 Depth = 2.0529 ft Length = 869.22 ft Velocity = .544 ft/sec Residence Time = .4438 hours Recommendation: A complete mix assumption is appropriate for this situation and the entire 1Q10 may be used. Virginia DEQ Mixing Zone Analysis Version 2.1	Stream 7Q10 = 34.6 MGD Stream 30Q10 = 39.9 MGD Stream 1Q10 = 32.2 MGD Stream slope = 0.0007 ft/ft Stream width = 42 ft Bottom scale = 3 Channel scale = 1 Mixing Zone Predictions @ 7Q10 Depth = 2.4643 ft Length = 737.72 ft Velocity = .6072 ft/sec Residence Time = .0141 days Recommendation: A complete mix assumption is appropriate for this situation and the entire 7Q10 may be used. Mixing Zone Predictions @ 30Q10 Depth = 2.6615 ft Length = 688.03 ft Velocity = .6356 ft/sec Residence Time = .0125 days Recommendation: A complete mix assumption is appropriate for this situation and the entire 30Q10 may be used. Mixing Zone Predictions @ 1Q10 Depth = 2.3721 ft Length = 763.53 ft Velocity = .5935 ft/sec Residence Time = .3573 hours Recommendation: A complete mix assumption is appropriate for this situation and the entire 1Q10 may be used. Virginia DEQ Mixing Zone Analysis Version 2.1

Fact Sheet – VPDES Permit No. VA0025151 – Waynesboro WWTP

APPENDIX B

EFFLUENT SCREENING AND EFFLUENT LIMITATIONS

EFFLUENT LIMITATIONS

A comparison of technology and water quality-based limits was performed and the most stringent limits were selected, as summarized in the table below.

Outfall 002

Final Limits

Design Flow: 6.0 MGD

PARAMETER	BASIS FOR LIMITS	EFFLUENT LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average		Maximum		Frequency	Sample Type
Flow (MGD)	1	NL		NL		Continuous	TIRE
-----	-----	Monthly Average		Weekly Average		-----	-----
CBOD ₅ (Jun-Dec)	3,4,5	5 mg/L	113.6 kg/d	8 mg/L	180 kg/d	5/Week	24 HC
CBOD ₅ (Jan-May)	3,4,5	10 mg/L	227 kg/d	15 mg/L	340 kg/d	5/Week	24 HC
TSS	6,7	20 mg/L	450 kg/d	30 mg/L	680 kg/d	1/Month	24 HC
Total Phosphorus (mg/L)	6	NL		NA		1/Week	24 HC
Ammonia-N (Jun-Dec)	3	7.3		9.2		5/Week	24 HC
Effluent Chlorine (TRC)(mg/L)*	3	0.036		0.039		12/Day	Grab
E. coli (N/100 mL) (geometric mean)	3,6	126		NA		4/Month* or 3/Week** 10 am to 4 pm	Grab
-----	-----	Annual Average		Maximum		-----	-----
TP – Year to Date (mg/L)	9	NL		NA		1/Month	Calculated
TP – Calendar Year	6,9,10	0.3 mg/L		3655 lb/yr		1/Year	Calculated
TN – Year to Date (mg/L)	9	NL		NA		1/Month	Calculated
TN – Calendar Year (mg/L)	9,10	3.0		NA		1/Year	Calculated
-----	-----	Minimum		Maximum		-----	-----
pH (S.U.)	3	6.5		9.5		1/Day	Grab
Dissolved Oxygen (mg/L)	3,4	6.0		NA		1/Day	Grab
Contact Chlorine (TRC)(mg/L)*	3,8	1.0		NA		12/Day	Grab

NL = No Limitation, monitoring required

NA = Not Applicable

TIRE = Totalizing, Indicating, and Recording equipment

24 HC = 24-Hour Composite

4/Month = 4 samples taken monthly, with at least 1 sample taken each calendar week

3/Week = 3 samples taken during the calendar week no less than 48 hours apart

12/Day = Grab sample with a minimum time separation of 90 minutes and a maximum time separation of 150 minutes

* = Applicable only when chlorination is used for disinfection

** = Applicable if an alternative to chlorination is used for disinfection.

BASIS DESCRIPTIONS

1. VPDES Permit Regulation (9VAC25-31)
2. Federal Effluent Requirements (Secondary Treatment Regulation - 40CFR133)
3. Water Quality Standards (9VAC25-260)
4. Regional DO Model
5. WQMP Regulation (9VAC25-720-50)
6. South River Watershed Bacteria and Benthic TMDL
7. Chesapeake Bay TSS TMDL
8. Best Professional Judgment (BPJ)
9. GM No. 07-2008, Amendment No. 2, 10/23/07, Permitting Considerations for Facilities in the Chesapeake Bay Watershed
10. Annual average concentration limits are based on the Technology Regulation (9VAC25-40)

Fact Sheet – VPDES Permit No. VA0025151 – Waynesboro WWTP

LIMITING FACTORS – OVERVIEW:

The following potential limiting factors have been considered in developing this permit and fact sheet:

Water Quality Management Plan Regulation (WQMP) (9VAC25-720)	
A. TMDL limits	E. coli, TSS, TP, and Mercury
B. Non-TMDL WLAs	CBOD₅
C. CBP (TN & TP) WLAs	TN and TP via GP VAN010098
Federal Effluent Guidelines	CBOD₅, TSS, pH
BPJ/Agency Guidance limits	TRC (contact)
Water Quality-based Limits - numeric	CBOD₅, DO, TRC (effluent), E. coli, pH, Ammonia-N, TKN
Water Quality-based Limits - narrative	None
Technology-based Limits (9VAC25-40-70)	TN, TP
Whole Effluent Toxicity (WET)	None (monitoring only)
Chesapeake Bay TMDL	TP, TN and TSS
Stormwater Limits	Approved No Exposure Certification (NEC)

EVALUATION OF THE EFFLUENT – FEDERAL EFFLUENT GUIDELINES (FEGs):

The Federal Effluent Guidelines for secondary treatment specify the following limits for wastewater treatment plants treating domestic waste:

BOD₅: Monthly Average = 30 mg/L; Maximum Weekly Average = 45 mg/L

CBOD₅: Monthly Average = 25 mg/L; Maximum Weekly Average = 40 mg/L

TSS: Monthly Average = 30 mg/L; Maximum Weekly Average = 45 mg/L

pH: Range of 6.0 – 9.0 SU

EVALUATION OF THE EFFLUENT – WATER QUALITY MANAGEMENT PLAN LIMITS:

The WQMP establishes monthly average CBOD₅ loading limits of 227 kg/day (November – May) and 113.6 kg/d (June – October) for this facility.

EVALUATION OF THE EFFLUENT – CBOD₅ AND DO:

The South River DO Model was updated at this reissuance due to new stream flow and effluent temperature data.

The DO model demonstrates the previous permit limits for CBOD₅ and DO shown below are protective of downstream WQC requirements. CBOD₅ limits were calculated as follows to maintain compliance with the FEGs and the WQMP monthly average loading limits:

CBOD ₅ (Jun-Dec)	5 mg/L
CBOD ₅ (Jan-May)	10 mg/L
DO	6.0 mg/L

CBOD₅ Annual Season (June – December):

Monthly Average: 5 mg/L

$(5 \text{ mg/L})(6.0 \text{ MGD})(3.785) = 113.55 \text{ kg/d}$, round to 113.6 kg/d to comply with the WQMP

Maximum Weekly Average concentration limit: $(5 \text{ mg/L})(1.5) = 7.5 \text{ mg/L}$, round to 8 mg/L

Maximum Weekly Average loading limit: $(8 \text{ mg/L})(6.0 \text{ MGD})(3.785) = 181.68 \text{ kg/d}$, round to 180 kg/d

Fact Sheet – VPDES Permit No. VA0025151 – Waynesboro WWTP

CBOD₅ Wet Season (January – May):

Monthly Average: 10 mg/L

$(10 \text{ mg/L})(6.0 \text{ MGD})(3.785) = 227.1 \text{ kg/d}$, round to 227 kg/d to comply with the WQMP

Maximum Weekly Average concentration limit: $(10 \text{ mg/L})(1.5) = 15 \text{ mg/L}$

$(15 \text{ mg/L})(6.0 \text{ MGD})(3.785) = 340.65 \text{ kg/d}$, round to 340 kg/d

Based on the municipal sampling schedule table in Guidance Memo No. 14-2003, the monitoring frequency for CBOD₅ for facilities of this size is in the range of 5-7 Days/Week. The sampling frequency is currently 1/Day. The facility was expanded and upgraded in 2010 for nutrient removal. Based on the compliance history, the sampling frequency for CBOD₅ has been changed from 1/Day to 5/Week.

EVALUATION OF THE EFFLUENT – TKN:

Annual Season (June – December):

The Ammonia-N (Jun-Dec) chronic WLA was 7.0 mg/L. If the Ammonia WLAc is $\geq 4 \text{ mg/L}$, the modeled TKN is set at $(2)(\text{WLAc}) = (2)(7) = 14 \text{ mg/L}$.

The permit contains Ammonia-N limits for the annual season. As such, the Ammonia-N limitations (based on chronic toxicity) applied to the permit are deemed adequate for ensuring compliance with the modeled TKN value of 14 mg/L, and no TKN limits have been included in the permit.

Wet Season (January – May):

The Ammonia-N chronic WLA was 12 mg/L for the Wet Season. If the Ammonia WLAc is $\geq 4 \text{ mg/L}$, the modeled TKN is set at $(2)(\text{WLAc}) = (2)(12) = 24 \text{ mg/L}$. TKN is never set at greater than 20 mg/L, so 20 mg/L was utilized.

If the modeled TKN is 20 mg/L, it is generally not necessary to impose a TKN limit. Sewage treatment facilities are not expected to discharge TKN greater than 20 mg/L; therefore, no TKN limits have been included in the permit.

EVALUATION OF THE EFFLUENT – TSS:

TSS limits were developed based on the most stringent of the following:

- FEGs for Secondary Treatment
- South River TMDL sediment WLA of 248 Metric Tons per year. This converts to 548,289.7 lb/year as follows:
 $(248.7 \text{ metric tons}/X \text{ lb})(1 \text{ metric ton}/2204.623 \text{ lb})$
 $X = 548,289.7 \text{ lb/year}$
- Chesapeake Bay TMDL for TSS of 365,467 lb/year

$$(365,467 \text{ lb/year}) / (365 \text{ days/year}) / (6.0 \text{ MGD}) / 8.345 = 20 \text{ mg/L}$$

Monthly Average TSS concentration limit = 20 mg/L

Monthly Average TSS loading limit = $(20 \text{ mg/L})(6.0 \text{ MGD})(3.785) = 454.2 \text{ kg/d}$, round to 450 kg/d

Maximum Weekly Average TSS concentration limit = $(20 \text{ mg/L})(1.5) = 30 \text{ mg/L}$

Maximum Weekly Average TSS loading limit = $(30 \text{ mg/L})(6.0 \text{ MGD})(3.785) = 681.3 \text{ kg/d}$, round to 680 kg/d

A review of the DMR data indicated that the more stringent TSS limits can be met; therefore, no compliance schedule has been included in the permit.

Fact Sheet – VPDES Permit No. VA0025151 – Waynesboro WWTP

EVALUATION OF THE EFFLUENT – DISINFECTION:

Waynesboro WWTP currently uses UV disinfection. The E. coli limits contained in the permit are based on the South River Watershed E. coli WLA of 1.04×10^{13} cfu/year. The TMDL is based on a design flow of 6.0 MGD and an effluent concentration of 126 cfu/100 mL. The E. coli limit of 126 cfu/100 mL has been carried forward from the previous permit.

E. coli is currently monitored 3/Week. The municipal sampling table in Guidance Memo No. 14-2003 recommends a sampling frequency of 1/Day. Because this facility has had no compliance issues with E. coli or disinfection, the sampling frequency of 3/Week has been carried forward from the previous permit.

If chlorine disinfection is utilized, E. coli monitoring of 4/Month is required. In addition, if chlorine disinfection is utilized, the following TRC requirements apply per Guidance Memo No. 14-2003:

- Effluent TRC and Contact TRC shall be monitored 12/Day with a minimum time separation of 90 minutes and a maximum time separation of 150 minutes.

EVALUATION OF THE EFFLUENT – NUTRIENTS:

In accordance with § 62.1-44.19:14.C.5. of the Code of Virginia, this Significant Discharger has submitted a Registration Statement and DEQ has recognized that they are covered under the General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for TN and TP Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia (9VAC25-820) (GP). The effective date of coverage is January 1, 2012. Coverage under the GP will expire December 31, 2016.

The Chesapeake Bay TMDL specifies WLAs for TN, TP, and sediment that resulted from EPA's evaluation of the jurisdictions' final Phase I WIPs as described in Section 8 of the TMDL. Table 9-4 of Appendix Q of the TMDL contains the following WLAs for this discharge:

A TN WLA of 48,729 lb/year is specified for this facility based on a design flow of 4.0 MGD and a concentration of 4.0 mg/L. This WLA is the same as the WLA specified for TN for this facility in the Registration List as part of the Nutrient General Permit Regulation at 9VAC25-820-70.

A TP WLA of 3,655 lb/year is specified for this facility based on a flow of 4.0 MGD and a concentration of 0.3 mg/L. This WLA is the same as the WLA specified for TP for this facility in the Registration List as part of the Nutrient General Permit Regulation at 9VAC25-820-70 and also the WLA specified for this facility in the South River TP TMDL.

When the permit was reissued in 2010, the permittee was operating at the 4.0 MGD design flow and discharging through Outfall 001. Part I.B. of the 2010 Permit contained a Schedule of Compliance for meeting the TP loading limit of 3,655 pounds per year at Outfall 001 by January 1, 2011.

Waynesboro completed a substantial upgrade and expansion of the WWTP from 4.0 MGD to 6.0 MGD. A preliminary CTO was issued on August 20, 2010. In September 2010, Waynesboro began discharging through a new Outfall 002. Outfall 001 was taken out of service. A final CTO was issued on November 8, 2010. In a letter dated January 4, 2011, Waynesboro notified DEQ that they were in compliance with the final TP loading limit of 3,655 pounds per year.

A new DMR was issued for Outfall 002 with calendar year TN limits of 3.0 mg/L and calendar year TP limits of 0.3 mg/L. In addition, the calendar year loading limit for TP of 3,655 pounds per year became effective. The TP loading limit is included in both the individual permit VA0025151 and the Nutrient General Permit VAN010098.

Fact Sheet – VPDES Permit No. VA0025151 – Waynesboro WWTP

Nutrient Offset Plan:

The previous permit contained a special condition requiring the submittal of an offset plan for any annual TN and/or TP loadings above those permitted prior to July 1, 2005. The following TP and TN limits became effective for the 6.0 MGD WWTP:

- TP = 0.3 mg/L
- TN = 3.0 mg/L

The Registration List, Nutrient General Permit VAN010098, and Chesapeake Bay TMDL have loading limits of:

- TP = 3,655 lb/yr
- TN = 48,729 lb/yr

The concentration limits for TP and TN contained in the permit translate to the following loadings:

- TP = (0.3 mg/L)(6.0 MGD)(8.3438) = 5,481.89 lb/yr
- TN = (3.0 mg/L)(6.0 MGD)(8.3438) = 54,818 lb/yr

A comparison between the TP and TN loadings at the permitted concentration verses the loading required under the Nutrient General Permit VAN010098 is:

- TP: 5,481.89 lb/yr > 3,655 lb/yr.
- TN: 54,818 lb/yr > 48,729 lb/yr

The TP and TN load limits cannot be met at the design flow and TP and TN concentration specified in the permit; therefore, an offset plan is required. Because an offset plan was submitted under the previous permit and remains on file at DEQ, the submittal of a new offset plan is not necessary.

EVALUATION OF THE EFFLUENT – TOXICS:

Stream: Water quality data for the receiving stream were obtained from Ambient Monitoring Station No. 1BSTH027.85 on the South River located upstream of the discharge point. A Flow Frequency Determination for the receiving stream is included in Appendix A. The “Wet Season” or “High Flow” months are January through May.

Stream Information			
90% Annual Temp (°C) =	21.7	90% pH (SU) =	8.6
90% Wet Temp (°C) =	16.3	10% pH (SU) =	7.2
Mean Hardness (mg/L) =	84.5		

Ammonia-N and TRC are assumed absent in the receiving stream because there are no data for these parameters directly above the discharge. No other toxics under evaluation are documented to occur in the South River directly above the Waynesboro WWTP discharge.

Discharge: The pH and temperature values were obtained from daily logs from 2011 to 2013 submitted by the permittee. The hardness data was collected from chemical data submitted with the Form 2A application.

Effluent Information			
90% Annual Temp (°C) =	24.4	90% pH (SU) =	7.5
90% Wet Temp (°C) =	18.4	10% pH (SU) =	6.9
Mean Hardness (mg/L) =	148		

Fact Sheet – VPDES Permit No. VA0025151 – Waynesboro WWTP

WQC and WLAs were calculated for the WQS parameters for which data are available. The resulting WQC and WLAs are presented in this appendix. Current agency guidelines recommends the evaluation of toxic pollutant limits for TRC and Ammonia-N be based on default effluent concentrations of 20 mg/L and 9 mg/L, respectively. The effluent data were analyzed per the protocol for evaluation of effluent toxic pollutants included in this appendix with the following results:

- TRC: More stringent limits were determined to be necessary. This change is due to an increase in the monitoring frequency from 1/Day to 1/2 Hours, as specified by Guidance Memo No. 14-2003.
- Ammonia-N: During the previous reissuance, no Ammonia-N limits were determined to be necessary for the 6.0 MGD facility. At this reissuance, Ammonia-N limits were determined to be necessary for the June to December season. This change is due to revised stream flows and revised effluent and receiving stream pH and temperature. The monitoring frequency for Ammonia-N is 5/Week.

Fact Sheet – VPDES Permit No. VA0025151 – Waynesboro WWTP

WQC-WLA SPREADSHEET INPUT

WATER QUALITY CRITERIA / WASTE LOAD ALLOCATION ANALYSIS

Facility Name:
Waynesboro WWTP-Outfall 002

Receiving Stream:
South River

Permit No.: VA0025151
Date: 10/3/2014

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information	Stream Flows	Mixing Information	Effluent Information
Mean Hardness (as CaCO ₃) = 84.5 mg/L	1Q10 (Annual) = 24.3 MGD	Annual - 1Q10 Flow = 100 %	Mean Hardness (as CaCO ₃) = 148 mg/L
90% Temperature (Annual) = 21.7 deg C	7Q10 (Annual) = 25.2 MGD	- 7Q10 Flow = 100 %	90% Temp (Annual) = 24.4 deg C
90% Temperature (Wet season) = 16.3 deg C	30Q10 (Annual) = 26.5 MGD	- 30Q10 Flow = 100 %	90% Temp (Wet season) = 18.4 deg C
90% Maximum pH = 8.6 SU	1Q10 (Wet season) = 32.2 MGD	Wet Season - 1Q10 Flow = 100 %	90% Maximum pH = 7.5 SU
10% Maximum pH = 7.2 SU	30Q10 (Wet season) = 39.9 MGD	- 30Q10 Flow = 100 %	10% Maximum pH = 6.9 SU
Tier Designation = 1	30Q5 = 28 MGD		Current Discharge Flow = 6.00000 MGD
Public Water Supply (PWS) Y/N? = N	Harmonic Mean = 56.7 MGD		Discharge Flow for Limit Analysis = 6.00000 MGD
V(alley) or P(iedmont)? = V			
Trout Present Y/N? = N			
Early Life Stages Present Y/N? = Y			

Footnotes:

- All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise.
- All flow values are expressed as Million Gallons per Day (MGD).
- Discharge volumes are highest monthly average or 2C maximum for Industries and design flows for Municipals.
- Hardness expressed as mg/l CaCO₃. Standards calculated using Hardness values in the range of 25-400 mg/l CaCO₃.
- "Public Water Supply" protects for fish & water consumption. "Other Surface Waters" protects for fish consumption only.
- Carcinogen "Y" indicates carcinogenic parameter.
- Ammonia WQOs selected from separate tables, based on pH and temperature.
- Metals measured as Dissolved, unless specified otherwise.
- WLA = Waste Load Allocation (based on standards).
- WLA = Waste Load Allocation (based on standards).
- WLAs are based on mass balances (less background, if data exist).
- Acute - 1 hour avg. concentration not to be exceeded more than 1/3 years.
- Chronic - 4 day avg. concentration (30 day avg. for Ammonia) not to be exceeded more than 1/3 years.
- Mass balances employ 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens, and Harmonic Mean for Carcinogens. Actual flows employed are a function of the mixing analysis and may be less than the actual flows.
- Effluent Limitations are calculated elsewhere using the minimum WLA and EPA's statistical approach (Technical Support Document).

WQC-WLA SPREADSHEET OUTPUT

Facility Name:		Permit No.:		WATER QUALITY CRITERIA				NON-ANTIDEGRADATION			
Waynesboro WWTP-Outfall 002		VA0025151		6.000 MGD Discharge Flow - Mixer per "Mixer"				WASTE LOAD ALLOCATIONS			
Receiving Stream:		Date:		Human Health				6.000 MGD Discharge - Mixer per "Mixer"			
South River		8/22/2014		Aquatic Protection		Public Water	Other Surface	Aquatic Protection		Human	
Toxic Parameter and Form	Carcinogen?	Acute	Chronic	Supplies	Waters	Supplies	Waters	Acute	Chronic	Supplies	Waters
Ammonia-N (Annual)	N	7.3E+00 mg/L	1.3E+00 mg/L	None	None	None	None	3.7E+01 mg/L	7.0E+00 mg/L	N/A	N/A
Ammonia-N (Wet Season)	N	6.4E+00 mg/L	1.6E+00 mg/L	None	None	None	None	4.1E+01 mg/L	1.2E+01 mg/L	N/A	N/A
Antimony	N	None	None	5.6E+00	6.4E+02	None	None	N/A	N/A	3.6E+03	N/A
Arsenic	N	3.4E+02	1.5E+02	1.0E+01	None	None	None	1.7E+03	7.8E+02	N/A	N/A
Cadmium	N	3.8E+00	1.1E+00	5.0E+00	None	None	None	1.9E+01	5.7E+00	N/A	N/A
Chloride	N	8.6E+02 mg/L	2.3E+02 mg/L	2.5E+02 mg/L	None	None	None	4.3E+03 mg/L	1.2E+03 mg/L	N/A	N/A
Chlorine, Total Residual	N	1.9E-02 mg/L	1.1E-02 mg/L	None	None	None	None	9.6E-02 mg/L	5.7E-02 mg/L	N/A	N/A
Chromium (+3)	N	5.6E+02	7.2E+01	None	None	None	None	2.8E+03	3.7E+02	N/A	N/A
Chromium (+6)	N	1.6E+01	1.1E+01	None	None	None	None	8.1E+01	5.7E+01	N/A	N/A
Copper	N	1.3E+01	8.7E+00	1.3E+03	None	None	None	6.6E+01	4.5E+01	N/A	N/A
Nickel	N	1.8E+02	2.0E+01	6.1E+02	4.6E+03	None	None	9.0E+02	1.0E+02	2.6E+04	N/A
Selenium, Total Recoverable	N	2.0E+01	5.0E+00	1.7E+02	4.2E+03	None	None	1.0E+02	2.6E+01	2.4E+04	N/A
Silver	N	3.3E+00	None	None	None	None	None	1.7E+01	N/A	N/A	N/A
Zinc	N	1.1E+02	1.1E+02	7.4E+03	2.6E+04	None	None	5.8E+02	6.0E+02	1.5E+05	N/A

Fact Sheet – VPDES Permit No. VA0025151 – Waynesboro WWTP

PROTOCOL FOR THE EVALUATION OF THE EFFLUENT – TOXIC POLLUTANTS – Outfall 002

Toxic pollutants were evaluated in accordance with OWP Guidance Memo No. 00-2011. Acute and Chronic WLAs (WLA_a and WLA_c) were analyzed according to the protocol below using a statistical approach (STAT.exe) to determine the necessity and magnitude of limits. Human Health WLAs (WLA_{hh}) were analyzed according to the same protocol through a simple comparison with the effluent data. If the WLA_{hh} exceeded the effluent datum or data mean, no limits were required. If the effluent datum or data mean exceeded the WLA_{hh} , the WLA_{hh} was imposed as the limit. Since there are no data available immediately upstream of this discharge, all other upstream (background) pollutant concentrations are assumed to be "0".

The steps used in evaluating the effluent data are as follows:

- A. If all data are reported as "below detection" or $<$ the required Quantification Level (QL), and at least one detection level is \leq the required QL, then the pollutant is considered to be not significantly present in the discharge and no further monitoring is required.
 - * The required QL was 10.0 ug/L. Three samples were collected and the QLs utilized were 10.3 ug/L, 10.4 ug/L or 10.5 ug/L. All three results were reported as \leq the respective QL. Although none of the detection levels were \leq the required QL, because the detection levels were very close to the required QL for all three samples, the pollutant is considered to be not significantly present in the discharge and no further monitoring is required.
- B. If all data are reported as "below detection", and all detection levels are $>$ the required QL, then an evaluation is performed in which the pollutant is assumed present at the lowest reported detection level.
 - B.1. If the evaluation indicates that no limits are needed, then the existing data set is adequate and no further monitoring is required.
 - B.2. If the evaluation indicates that limits are needed, then the existing data set is inadequate to make a determination and additional monitoring is required.
- C. If any data value is reported as detectable at or above the required QL, then the data are adequate to determine whether effluent limits are needed.
 - C.1. If the evaluation indicates that no limits are needed, then no further monitoring is required.
 - C.2. If the evaluation indicates that limits are needed, then the limits and associated requirements are specified in the draft permit.
 - C.3. (Exception for Metals data only) If the evaluation indicates that limits are needed, but the data are reported as a form other than "Dissolved" (except for Selenium), then the existing data set is inadequate to make a determination and additional monitoring is required.

Fact Sheet – VPDES Permit No. VA0025151 – Waynesboro WWTP

Parameter	CASRN	QL (ug/L)	Data (ug/L unless noted otherwise)	Source of Data	Data Eval
METALS					
Antimony, dissolved	7440-36-0	0.2	0.2, <10, <10 (Total)	b,c,d	C.1
Arsenic, dissolved	7440-38-2	1.0	<5, <5, <5 (Total)	b,c,d	B.1
Barium, dissolved	7440-39-3	---	Applicable to PWS waters only	---	---
Cadmium, dissolved	7440-43-9	0.3	<1, <1, <1 (Total)	b,c,d	B.1
Chromium III, dissolved	16065-83-1	0.5	<10, <5, <5 (Total)	b,c,d	B.1
Chromium VI, dissolved	18540-29-9	0.5	<10, <5, <5 (Total)	b,c,d	B.1
Chromium, Total	7440-47-3	---	Applicable to PWS waters only	---	---
Copper, dissolved	7440-50-8	0.5	1.5, 2.3, <5 (Total)	b,c,d	C.1
Iron, dissolved	7439-89-6	1.0	Applicable to PWS waters only	---	---
Lead, dissolved	7439-92-1	0.5	0.4, <1, <1 (Total)	b,c,d	A
Manganese, dissolved	7439-96-5	0.2	Applicable to PWS waters only	---	---
Mercury, dissolved	7439-97-6	1.0	<1, <1, <1	b,c,d	A
Nickel, dissolved	7440-02-0	0.5	4.0, <10, <10 (Total)	b,c,d	C.1
Selenium, total recoverable	7782-49-2	2.0	<5, <5, <5	b,c,d	B.1
Silver, dissolved	7440-22-4	0.2	<5, <5, <5	b,c,d	B.1
Thallium, dissolved	7440-28-0	---	<1, <1, <1	b,c,d	A
Zinc, dissolved	7440-66-6	2.0	56.9, 20, 18.6	b,c,d	C.1
PESTICIDES/PCBS					
Aldrin ^C	309-00-2	0.05	<0.05	b	A
Chlordane ^C	57-74-9	0.2	<0.2	b	A
Chlorpyrifos	2921-88-2	(5)	<10.3	b	A
DDD ^C	72-54-8	0.1	<0.05	b	A
DDE ^C	72-55-9	0.1	<0.05	b	A
DDT ^C	50-29-3	0.1	<0.05	b	A
Demeton	8065-48-3	---	<10.3	b	A
Diazinon	333-41-5	---	<10.3	b	A
Dieldrin ^C	60-57-1	0.1	<0.05	b	A
Alpha-Endosulfan	959-98-8	0.1	<0.05	b	A
Beta-Endosulfan	33213-65-9	0.1	<0.05	b	A
Alpha-Endosulfan + Beta-Endosulfan		---	<0.10	b	A
Endosulfan Sulfate	1031-07-8	0.1	<0.05	b	A
Endrin	72-20-8	0.1	<0.05	b	A
Endrin Aldehyde	7421-93-4	---	<0.05	b	A
Guthion	86-50-0	---	<10.3	b	A
Heptachlor ^C	76-44-8	0.05	<0.05	b	A
Heptachlor Epoxide ^C	1024-57-3	---	<0.05	b	A
Hexachlorocyclohexane Alpha-BHC ^C	319-84-6	---	<0.05	b	A
Hexachlorocyclohexane Beta-BHC ^C	319-85-7	---	<0.05	b	A
Hexachlorocyclohexane Gamma-BHC (synonym = Lindane)	58-89-9	---	<0.05	b	A
Kepone	143-50-0	---	<10.3	b	A
Malathion	121-75-5	---	<10.3	b	A
Methoxychlor	72-43-5	---	<0.05	b	A

Fact Sheet – VPDES Permit No. VA0025151 – Waynesboro WWTP

Parameter	CASRN	QL (ug/L)	Data (ug/L unless noted otherwise)	Source of Data	Data Eval
Mirex	2385-85-5	---	<0.05	b	A
Parathion	56-38-2	---	<10.3	b	A
PCB Total ^C	1336-36-3	7.0	<0.5	b	A
Toxaphene ^C	8001-35-2	5.0	<0.5	b	A
BASE NEUTRAL EXTRACTABLES					
Acenaphthene	83-32-9	10.0	<10.3, <10.5, <10.4	b,c,d	A*
Anthracene	120-12-7	10.0	<10.3, <10.5, <10.4	b,c,d	A*
Benzidine ^C	92-87-5	---	<10.3, <10.5, <10.4	b,c,d	A
Benzo (a) anthracene ^C	56-55-3	10.0	<5, <10.5, <10.4	b,c,d	A
Benzo (b) fluoranthene ^C	205-99-2	10.0	<5, <10.5, <10.4	b,c,d	A
Benzo (k) fluoranthene ^C	207-08-9	10.0	<5, <10.5, <10.4	b,c,d	A
Benzo (a) pyrene ^C	50-32-8	10.0	<5, <10.5, <10.4	b,c,d	A
Bis 2-Chloroethyl Ether ^C	111-44-4	---	<10.3, <10.5, <10.4	b,c,d	A
Bis 2-Chloroisopropyl Ether	108-60-1	---	<10.3, <10.5, <10.4	b,c,d	A
Bis-2-Ethylhexyl Phthalate ^C	117-81-7	10.0	<10.3, <10.5, <10.4	b,c,d	A*
Butyl benzyl phthalate	85-68-7	10.0	<10.3, <10.5, <10.4	b,c,d	A*
2-Chloronaphthalene	91-58-7	---	<10.3, <10.5, <10.4	b,c,d	A
Chrysene ^C	218-01-9	10.0	<5, <10.5, <10.4	b,c,d	A
Dibenz(a,h)anthracene ^C	53-70-3	20.0	<10.3, <10.5, <10.4	b,c,d	A
1,2-Dichlorobenzene	95-50-1	10.0	<10.3, <10.5, <10.4	b,c,d	A*
1,3-Dichlorobenzene	541-73-1	10.0	<10.3, <10.5, <10.4	b,c,d	A*
1,4-Dichlorobenzene	106-46-7	10.0	<10.3, <10.5, <10.4	b,c,d	A*
3,3-Dichlorobenzidine ^C	91-94-1	---	<10.3, <10.5, <10.4	b,c,d	A
Diethyl phthalate	84-66-2	10.0	<10.3, <10.5, <10.4	b,c,d	A*
Dimethyl phthalate	131-11-3	---	<10.3, <10.5, <10.4	b,c,d	A
Di-n-Butyl Phthalate	84-74-2	10.0	<10.6, <10.5, <10.4	b,c,d	A*
2,4-Dinitrotoluene	121-14-2	10.0	<10.3, <10.5, <10.4	b,c,d	A*
1,2-Diphenylhydrazine ^C	122-66-7	---	<10.3, <10.5, <10.4	b,c,d	A
Fluoranthene	206-44-0	10.0	<10.3, <10.5, <10.4	b,c,d	A*
Fluorene	86-73-7	10.0	<10.3, <10.5, <10.4	b,c,d	A*
Hexachlorobenzene ^C	118-74-1	---	<10.3, <10.5, <10.4	b,c,d	A
Hexachlorobutadiene ^C	87-68-3	---	<10.3, <10.5, <10.4	b,c,d	A
Hexachlorocyclopentadiene	77-47-4	---	<10.3, <10.5, <10.4	b,c,d	A
Hexachloroethane ^C	67-72-1	---	<10.3, <10.5, <10.4	b,c,d	A
Indeno(1,2,3-cd)pyrene ^C	193-39-5	20.0	<10.3, <10.5, <10.4	b,c,d	A
Isophorone ^C	78-59-1	10.0	<10.3, <10.5, <10.4	b,c,d	A*
Nitrobenzene	98-95-3	10.0	<10.3, <10.5, <10.4	b,c,d	A*
N-Nitrosodimethylamine ^C	62-75-9	---	<10.3, <10.5, <10.4	b,c,d	A
N-Nitrosodi-n-propylamine ^C	621-64-7	---	<10.3, <10.5, <10.4	b,c,d	A
N-Nitrosodiphenylamine ^C	86-30-6	---	<10.3, <10.5, <10.4	b,c,d	A
Pyrene	129-00-0	10.0	<10.3, <10.5, <10.4	b,c,d	A*
1,2,4-Trichlorobenzene	120-82-1	10.0	<10.3, <10.5, <10.4	b,c,d	A*

Fact Sheet – VPDES Permit No. VA0025151 – Waynesboro WWTP

Parameter	CASRN	QL (ug/L)	Data (ug/L unless noted otherwise)	Source of Data	Data Eval
VOLATILES					
Acrolein	107-02-8	---	<50, <10, <10	b,c,d	A
Acrylonitrile ^C	107-13-1	---	<50, <10, <10	b,c,d	A
Benzene ^C	71-43-2	10.0	<5, <1, <1	b,c,d	A
Bromoform ^C	75-25-2	10.0	<5, <1, <1	b,c,d	A
Carbon Tetrachloride ^C	56-23-5	10.0	<5, <1, <1	b,c,d	A
Chlorobenzene	108-90-7	50.0	<5, <1, <1	b,c,d	A
Chlorodibromomethane ^C	124-48-1	10.0	<5, <1, <1	b,c,d	A
Chloroform	67-66-3	10.0	<5, <1, <1	b,c,d	A
Dichlorobromomethane ^C	75-27-4	10.0	<5, <1, <1	b,c,d	A
1,2-Dichloroethane ^C	107-06-2	10.0	<5, <1, <1	b,c,d	A
1,1-Dichloroethylene	75-35-4	10.0	<5, <1, <1	b,c,d	A
1,2-trans-dichloroethylene	156-60-5	---	<5, <1, <1	b,c,d	A
1,2-Dichloropropane ^C	78-87-5	---	<5, <1, <1	b,c,d	A
1,3-Dichloropropene ^C	542-75-6	---	<5, <1, <1	b,c,d	A
Ethylbenzene	100-41-4	10.0	<5, <1, <1	b,c,d	A
Methyl Bromide	74-83-9	---	<5, <1, <1	b,c,d	A
Methylene Chloride ^C	75-09-2	20.0	<1, <1, <1	b,c,d	A
1,1,2,2-Tetrachloroethane ^C	79-34-5	---	<5, <1, <1	b,c,d	A
Tetrachloroethylene	127-18-4	10.0	<5, <1, <1	b,c,d	A
Toluene	10-88-3	10.0	<5, <1, <1	b,c,d	A
1,1,2-Trichloroethane ^C	79-00-5	---	<5, <1, <1	b,c,d	A
Trichloroethylene ^C	79-01-6	10.0	<5, <1, <1	b,c,d	A
Vinyl Chloride ^C	75-01-4	10.0	<5, <1, <1	b,c,d	A
RADIONUCLIDES					
Beta Particle & Photon Activity (mrem/yr)	N/A	---	Applicable to PWS waters only	---	---
Combined Radium 226 and 228 (pCi/L)	N/A	---	Applicable to PWS waters only	---	---
Gross Alpha Particle Activity (pCi/L)	N/A	---	Applicable to PWS waters only	---	---
Uranium	N/A	---	Applicable to PWS waters only	---	---
ACID EXTRACTABLES					
2-Chlorophenol	95-57-8	10.0	<10.3, <10.5, <10.4	b,c,d	A*
2,4-Dichlorophenol	120-83-2	10.0	<10.3, <10.5, <10.4	b,c,d	A*
2,4-Dimethylphenol	105-67-9	10.0	<10.3, <10.5, <10.4	b,c,d	A*
2,4-Dinitrophenol	51-28-5	---	<10.3, <10.5, <10.4	b,c,d	A
2-Methyl-4,6-Dinitrophenol	534-52-1	---	<10.3, <10.5, <10.4	b,c,d	A
Nonylphenol	104-40-51	---	<10.3	b	A
Pentachlorophenol ^C	87-86-5	50.0	<10.3, <10.5, <10.4	b,c,d	A
Phenol	108-95-2	10.0	<10.3, <10.5, <10	b,c,d	A
2,4,6-Trichlorophenol ^C	88-06-2	10.0	<10.3, <10.5, <10.4	b,c,d	A*
MISCELLANEOUS					
Ammonia-N (mg/L) (Annual) (June-Dec)	766-41-7	0.2 mg/L	Default = 9 mg/L	a	C.2
Ammonia-N (mg/L) (Wet Season) (Jan - May)	766-41-7	0.2 mg/L	Default = 9 mg/L	a	C.1

Fact Sheet – VPDES Permit No. VA0025151 – Waynesboro WWTP

Parameter	CASRN	QL (ug/L)	Data (ug/L unless noted otherwise)	Source of Data	Data Eval
Chloride (mg/L)	16887-00-6	---	50.6	b	C.1
TRC (mg/L)	7782-50-5	0.1 mg/L	Default = 20 mg/L	a	C.2
Cyanide, Free	57-12-5	10.0	<0.005, <20, <20 (Total)	b,c,d	A
2,4-Dichlorophenoxy acetic acid (synonym = 2,4-D)	94-75-7	---	Applicable to PWS waters only	---	---
Dioxin (2,3,7,8-tetrachlorodibenzo-p- dioxin)(ppq)	1746-01-6	0.01	Applicable to Paper Mills & Oil Refineries only	---	---
Foaming Agents (as MBAS)	N/A	---	Applicable to PWS waters only	---	---
Sulfide, dissolved	18496-25-8	100	NEW REQUIREMENT. Needs to be sampled	---	---
Nitrate as N (mg/L)	14797-55-8	---	Applicable to PWS waters only	---	---
Sulfate (mg/L)	N/A	---	Applicable to PWS waters only	---	---
Total Dissolved Solids (mg/L)	N/A	---	Applicable to PWS waters only	---	---
Tributyltin	60-10-5	---	<0.03	b	A
2-(2,4,5-Trichlorophenoxy) propionic acid (synonym = Silvex)	93-72-1	---	Applicable to PWS waters only	---	---
Hardness (mg/L as CaCO ₃)	471-34-1	---	132, 155, 157; Avg. = 148	b,c,d	---

The **superscript "C"** following the parameter name indicates that the substance is a known or suspected carcinogen; human health criteria at risk level 10⁻⁵.

CASRN = Chemical Abstract Service Registry Number for each parameter is referenced in the current Water Quality Standards. A unique numeric identifier designating only one substance. The Chemical Abstract Service is a division of the American Chemical Society.

“Source of Data” codes:

a = default effluent concentration

b = Attachment B monitoring received on 5.11.11 and 09.07.11; additional information received 10.28.13

c = Chemical scan #2 received 3.13.14 (sample date = 03.04.14)

d = Chemical scan #3 received 4.10.14 (sample date = 04.01.14)

"Data Evaluation" codes:

See section titled PROTOCOL FOR THE EVALUATION OF EFFLUENT TOXIC POLLUTANTS for an explanation of the code used.

Fact Sheet – VPDES Permit No. VA0025151 – Waynesboro WWTP

STAT.EXE RESULTS:

<p>Chemical = Ammonia-N Jun-Dec Chronic averaging period = 30 WLAa = 37 WLAc = 7 Q.L. = 0.2 # samples/mo. = 20 # samples/wk. = 5</p> <p>Summary of Statistics:</p> <p># observations = 1 Expected Value = 9 Variance = 29.16 C.V. = 0.6 97th percentile daily values = 21.9007 97th percentile 4 day average = 14.9741 97th percentile 30 day average= 10.8544 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data</p> <p>A limit is needed based on Chronic Toxicity Maximum Daily Limit = 14.1236906539142 Average Weekly limit = 9.20523288924685 Average Monthly Limit = 7.26878236683595</p> <p>The data are: 9</p>	<p>Chemical = Ammonia-N Jan-May Chronic averaging period = 30 WLAa = 41 WLAc = 12 Q.L. = 0.2 # samples/mo. = 20 # samples/wk. = 5</p> <p>Summary of Statistics:</p> <p># observations = 1 Expected Value = 9 Variance = 29.16 C.V. = 0.6 97th percentile daily values = 21.9007 97th percentile 4 day average = 14.9741 97th percentile 30 day average= 10.8544 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data</p> <p>No Limit is required for this material</p> <p>The data are: 9</p>	<p>Chemical = Total Residual Chlorine Chronic averaging period = 4 WLAa = 0.096 WLAc = 0.057 Q.L. = 0.1 # samples/mo. = 360 # samples/wk. = 84</p> <p>Summary of Statistics:</p> <p># observations = 1 Expected Value = 20 Variance = 144 C.V. = 0.6 97th percentile daily values = 48.6683 97th percentile 4 day average = 33.2758 97th percentile 30 day average= 24.1210 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data</p> <p>A limit is needed based on Chronic Toxicity Maximum Daily Limit = 8.33667626910342E-02 Average Weekly Limit = 0.038660696476403 Average Monthly Limit = 3.62969447124852E-02</p> <p>The data are: 20</p>
<p>Chemical = Arsenic Chronic averaging period = 4 WLAa = 1700 WLAc = 780 Q.L. = 1.0 # samples/mo. = 1 # samples/wk. = 1</p> <p>Summary of Statistics:</p> <p># observations = 3 Expected Value = 5 Variance = 9 C.V. = 0.6 97th percentile daily values = 12.1670 97th percentile 4 day average = 8.31895 97th percentile 30 day average= 6.03026 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data</p> <p>No Limit is required for this material</p> <p>The data are: 5,5,5</p>	<p>Chemical = Dissolved Cadmium Chronic averaging period = 4 WLAa = 19 WLAc = 5.7 Q.L. = 0.3 # samples/mo. = 1 # samples/wk. = 1</p> <p>Summary of Statistics:</p> <p># observations = 3 Expected Value = 1 Variance = .36 C.V. = 0.6 97th percentile daily values = 2.43341 97th percentile 4 day average = 1.66379 97th percentile 30 day average= 1.20605 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data</p> <p>No Limit is required for this material</p> <p>The data are: 1,1,1</p>	<p>Chemical = Hexavalent Chromium Chronic averaging period = 4 WLAa = 81 WLAc = 57 Q.L. = 0.5 # samples/mo. = 1 # samples/wk. = 1</p> <p>Summary of Statistics:</p> <p># observations = 3 Expected Value = 6.66666 Variance = 16 C.V. = 0.6 97th percentile daily values = 16.2227 97th percentile 4 day average = 11.0919 97th percentile 30 day average= 8.04035 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data</p> <p>No Limit is required for this material</p> <p>The data are: 10, 5, 5</p>

Fact Sheet – VPDES Permit No. VA0025151 – Waynesboro WWTP

<p>Chemical = Trivalent Chromium Chronic averaging period = 4 WLAa = 2800 WLAc = 370 Q.L. = 0.5 # samples/mo. = 1 # samples/wk. = 1</p> <p>Summary of Statistics:</p> <p># observations = 3 Expected Value = 6.66666 Variance = 16 C.V. = 0.6 97th percentile daily values = 16.2227 97th percentile 4 day average = 11.0919 97th percentile 30 day average= 8.04035 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data</p> <p>No Limit is required for this material</p> <p>The data are: 10,5, 5</p>	<p>Chemical = Dissolved Copper Chronic averaging period = 4 WLAa = 66 WLAc = 45 Q.L. = 0.5 # samples/mo. = 1 # samples/wk. = 1</p> <p>Summary of Statistics:</p> <p># observations = 3 Expected Value = 2.93333 Variance = 3.0976 C.V. = 0.6 97th percentile daily values = 7.13802 97th percentile 4 day average = 4.88045 97th percentile 30 day average= 3.53775 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data</p> <p>No Limit is required for this material</p> <p>The data are:1.5,2,3,5</p>	<p>Chemical = Dissolved Nickel Chronic averaging period = 4 WLAa = 900 WLAc = 100 Q.L. = 0.5 # samples/mo. = 1 # samples/wk. = 1</p> <p>Summary of Statistics:</p> <p># observations = 3 Expected Value = 8 Variance = 23.04 C.V. = 0.6 97th percentile daily values = 19.4673 97th percentile 4 day average = 13.3103 97th percentile 30 day average= 9.64842 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data</p> <p>No Limit is required for this material</p> <p>The data are: 4,10,10</p>
<p>Chemical = Selenium Chronic averaging period = 4 WLAa = 100 WLAc = 26 Q.L. = 2.0 # samples/mo. = 1 # samples/wk. = 1</p> <p>Summary of Statistics:</p> <p># observations = 3 Expected Value = 5 Variance = 9 C.V. = 0.6 97th percentile daily values = 12.1670 97th percentile 4 day average = 8.31895 97th percentile 30 day average= 6.03026 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data</p> <p>No Limit is required for this material</p> <p>The data are: 5,5, 5</p>	<p>Chemical = Dissolved Silver Chronic averaging period = 4 WLAa = 17 WLAc = Q.L. = 0.2 # samples/mo. = 1 # samples/wk. = 1</p> <p>Summary of Statistics:</p> <p># observations = 3 Expected Value = 5 Variance = 9 C.V. = 0.6 97th percentile daily values = 12.1670 97th percentile 4 day average = 8.31895 97th percentile 30 day average= 6.03026 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data</p> <p>No Limit is required for this material</p> <p>The data are: 5,5,5</p>	<p>Chemical = Dissolved Zinc Chronic averaging period = 4 WLAa = 580 WLAc = 600 Q.L. = 2.0 # samples/mo. = 1 # samples/wk. = 1</p> <p>Summary of Statistics:</p> <p># observations = 3 Expected Value = 31.8333 Variance = 364.81 C.V. = 0.6 97th percentile daily values = 77.4637 97th percentile 4 day average = 52.9639 97th percentile 30 day average= 38.3926 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data</p> <p>No Limit is required for this material</p> <p>The data are: 56.9,20,18.6</p>

Fact Sheet – VPDES Permit No. VA0025151 – Waynesboro WWTP

Chemical = Chloride
Chronic averaging period = 4
WLAa = 4300
WLAc = 1200
Q.L. = 0
samples/mo. = 1
samples/wk. = 1

Summary of Statistics:

observations = 1
Expected Value = 50.6
Variance = 921.729
C.V. = 0.6
97th percentile daily values = 123.130
97th percentile 4 day average = 84.1877
97th percentile 30 day average = 61.0262
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

No Limit is required for this material

The data are: 50.6

Fact Sheet – VPDES Permit No. VA0025151 – Waynesboro WWTP

WHOLE EFFLUENT TOXICITY (WET) EVALUATION:

Applicability of TMP: Guidance Memo No. 00-2012 states that a municipal sewage treatment plant with a design flow greater than or equal to 1.0 MGD is subject to TMP requirements (TMP Guidance Memo No. 00-2012, 8/4/2000, Part IV.2.A).

Summary of Toxicity Testing: The previous permit required acute and chronic testing using *Ceriodaphnia dubia* and *Pimephales promelas*. Tables 1 and 2 contain a summary of the toxicity testing results during the term of the permit. These data were evaluated using the procedures outlined in the TMP guidance.

Criteria for Acute Toxicity Testing: The Acute Instream Waste Concentration (IWCa) is $\leq 33\%$ (see Table 3) so the tests are based on the calculation of a valid LC₅₀.

Sample Type: A sample type of 24 hour composite is representative of the discharge.

Rationale for Monitoring Frequency: The permittee has completed the quarterly monitoring for the 6.0 MGD facility. All tests are acceptable, so annual monitoring has been required.

Calculation of WLAs: Acute and chronic WLAs were generated from the WETLimit10.xls spreadsheet by entering the design flow, stream flows, and stream mix percentages for the respective stream flows.

Dilution Series: The recommended dilution series for the acute tests is the standard 0.5 series (6.25%, 12.5%, 25%, 50%, 100%). The chronic dilution series that are being recommended are contained in Table 3.

Stat.exe Limit Evaluation: The WLAs are used in the Department's Stat.exe program in order to perform a statistical evaluation of the acute and chronic test results expressed as Toxicity Units (TUs). The toxicity data are analyzed separately by species and test type (acute or chronic).

A summary of the chronic toxicity testing performed during the term of the permit are shown in Table 2. As a result of the Stat.exe evaluation, a WET limit is not required.

A summary of the acute toxicity testing performed during the term of the permit are shown in Table 1. The TUa was <1.0 in every test. Because the acute toxicity testing indicates no toxicity, a WET limit is not required.

The midpoint of the chronic dilution series is $TUc = 3.1$. The midpoint of the chronic test dilution series was evaluated using Stat.exe to determine if limits would be inappropriately triggered (Table 4). The midpoint was entered as a chronic Toxicity Unit (TUc). Since no limit was triggered by the midpoint, the recommended dilution series can be used without the need for adjustment. The midpoint of 32% is equivalent to a TUc of 3.1.

Peer Reviewer: DMJ

Date: 8/4/14

Fact Sheet – VPDES Permit No. VA0025151 – Waynesboro WWTP

Table 1
Summary of Acute Toxicity Testing LC₅₀

Monitoring Period	Test Date	48-Hr. Static Acute <i>Ceriodaphnia dubia</i> (TUa)	48-Hr Static Acute <i>Pimephales promelas</i> (TUa)
1 st Qtr	03/10/11	<1.0	<1.0
2 nd Qtr	06/09/11	<1.0	<1.0
3 rd Qtr	09/15/11	<1.0	<1.0
4 th Qtr	12/15/11	<1.0	<1.0
1 st Annual	09/20/12	<1.0	<1.0
2 nd Annual	10/17/13	<1.0	<1.0
3 rd Annual	10/23/14	<1.0	<1.0

Table 2
Summary of Chronic Toxicity Testing

Monitoring Period	Test Date	Chronic 3-Brood Static Renewal Survival and Reproduction <i>Ceriodaphnia dubia</i> (TUc)			Chronic 7-Day Static Renewal Survival and Growth <i>Pimephales promelas</i> (TUc)		
		Survival (TUc)	Repro (TUc)	48-hr LC ₅₀	Survival (TUc)	Growth (TUc)	48-hr LC ₅₀
1st Qtr	03/8/11	1.0	1.0	>100	1.0	1.0	>100
2 nd Qtr	06/07/11	1.0	1.0	>100	1.0	1.0	>100
3 rd Qtr	09/11/11	1.0	1.0	>100	1.0	1.0	>100
4 th Qtr	12/13/11	1.0	1.0	>100	1.0	1.0	>100
1 st Annual	09/18/12	1.0	1.0	>100	1.0	1.0	>100
2 nd Annual	10/15/13	1.0	1.0	>100	1.0	1.0	>100
3 rd Annual	10/21/14	1.0	1.0	>100	1.0	1.0	>100

Fact Sheet – VPDES Permit No. VA0025151 – Waynesboro WWTP

Table 3 WETLim10.xls Spreadsheet

Spreadsheet for determination of WET test endpoints or WET limits										
Excel 97		Acute Endpoint/Permit Limit		Use as LC ₅₀ in Special Condition, as TU _a on DMR						
Revision Date: 12/13/13		ACUTE		100% =	NOAEC	LC ₅₀ = NA		% Use as	NA	TU _a
File: WETLIM10.xls		ACUTE WLA _a		1.515	Note: Inform the permittee that if the mean of the data exceeds this TU _a : 1.0 a limit may result using STATS.EXE					
(MIX.EXE required also)		Chronic Endpoint/Permit Limit		Use as NOEC in Special Condition, as TU _c on DMR						
		CHRONIC		7.60538836	TU _c	NOEC =		14 % Use as	7.14	TU _c
		BOTH*		15.1500004	TU _c	NOEC =		7 % Use as	14.28	TU _c
		AML		7.60538836	TU _c	NOEC =		14 % Use as	7.14	TU _c
Enter data in the cells with blue type:										
Entry Date:	07/31/14	ACUTE WLA _{a,c}		15.15	Note: Inform the permittee that if the mean of the data exceeds this TU _c : 3.12539381 a limit may result using STATS.EXE					
Facility Name:	Waynesboro WWTP	CHRONIC WLA _c		5.2						
VPDES Number:	VA0025151	* Both means acute expressed as chronic								
Outfall Number:	002									
		% Flow to be used from MIX.EXE				Diffuser /modeling study?				
Plant Flow:	6 MGD					Enter Y/N n				
Acute 1Q10:	24.3 MGD	100 %				Acute 1 :1				
Chronic 7Q10:	25.2 MGD	100 %				Chronic 1 :1				
Are data available to calculate CV? (Y/N)		N		(Minimum of 10 data points, same species, needed)					Go to Page 2	
Are data available to calculate ACR? (Y/N)		N		(NOEC<LC50, do not use greater/less than data)					Go to Page 3	
IWC _a	19.8019802 %	Plant flow/plant flow + 1Q10		NOTE: If the IWC _a is >33%, specify the NOAEC = 100% test/endpoint for use						
IWC _c	19.23076923 %	Plant flow/plant flow + 7Q10								
Dilution, acute	5.05	100/IWC _a								
Dilution, chronic	5.2	100/IWC _c								
WLA _a	1.515	Instream criterion (0.3 TU _a) X's Dilution, acute								
WLA _c	5.2	Instream criterion (1.0 TU _c) X's Dilution, chronic								
WLA _{a,c}	15.15	ACR X's WLA _a - converts acute WLA to chronic units								
ACR -acute/chronic ratio	10	LC50/NOEC (Default is 10 - if data are available, use tables Page 3)								
CV-Coefficient of variation	0.6	Default of 0.6 - if data are available, use tables Page 2)								
Constants	eA	0.4109447	Default = 0.41							
	eB	0.6010373	Default = 0.60							
	eC	2.4334175	Default = 2.43							
	eD	2.4334175	Default = 2.43 (1 samp)							
		No. of samples	1	**The Maximum Daily Limit is calculated from the lowest LTA, X's eC. The LTA _{a,c} and MDL using it are driven by the ACR.						
LTA _{a,c}	6.225812205	WLA _{a,c} X's eA								
LTA _c	3.12539396	WLA _c X's eB								
MDL** with LTA _{a,c}	15.15000037	TU _c	NOEC =	6.600660	(Protects from acute/chronic toxicity)					Rounded NOEC's %
MDL** with LTA _c	7.605388357	TU _c	NOEC =	13.148572	(Protects from chronic toxicity)					NOEC = 7 %
AML with lowest LTA	7.605388357	TU _c	NOEC =	13.148572	Lowest LTA X's eD					NOEC = 14 %
IF ONLY ACUTE ENDPOINT/LIMIT IS NEEDED, CONVERT MDL FROM TU _c to TU _a										
MDL with LTA _{a,c}	1.515000037	TU _a	LC50 =	66.006599	%					Rounded LC50's %
MDL with LTA _c	0.760538836	TU _a	LC50 =	131.485725	Use NOAEC=100%					LC50 = 67 %

CHRONIC DILUTION SERIES TO RECOMMEND					
Dilution series based on data mean	Monitoring % Effluent	TU _c	Limit		TU _c
			% Effluent		
Dilution series to use for limit	32	3.12539381	14		7.14
Dilution factor to recommend:	0.565685425		0.374165739		
Dilution series to recommend:	100.0	1.0	100.0		1.00
	56.6	1.8	37.4		2.67
	32.0	3.1	14.0		7.14
	18.1	5.5	5.2		19.09
	10.2	9.8	2.0		51.02
Extra dilutions if needed	5.79	17.26	0.73		136.36
	3.28	30.52	0.27		364.43

Fact Sheet – VPDES Permit No. VA0025151 – Waynesboro WWTP

**Table 4
Stat.exe Results**

<p>Chemical = WET Chronic Midpoint Check Chronic averaging period = 4 WLA_{A,c} = 15.15 WLA_c = 5.2 Q.L. = 1 # samples/mo. = 1 # samples/wk. = 1</p> <p>Summary of Statistics:</p> <p># observations = 1 Expected Value = 3.1 Variance = 3.4596 C.V. = 0.6 97th percentile daily values = 7.54359 97th percentile 4 day average = 5.15774 97th percentile 30 day average= 3.73876 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data</p> <p>No Limit is required for this material</p> <p>The data are: 3.1</p>	
<p>Chemical = WET Chronic Cd Chronic averaging period = 4 WLA_{A,c} = 15.15 WLA_c = 5.2 Q.L. = 1 # samples/mo. = 1 # samples/wk. = 1</p> <p>Summary of Statistics:</p> <p># observations = 7 Expected Value = 1 Variance = .36 C.V. = 0.6 97th percentile daily values = 2.43341 97th percentile 4 day average = 1.66379 97th percentile 30 day average= 1.20605 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data</p> <p>No Limit is required for this material</p> <p>The data are: 1,1,1,1,1,1,1</p>	<p>Chemical = WET Chronic Pp Chronic averaging period = 4 WLA_{A,c} = 15.15 WLA_c = 5.2 Q.L. = 1 # samples/mo. = 1 # samples/wk. = 1</p> <p>Summary of Statistics:</p> <p># observations = 7 Expected Value = 1 Variance = .36 C.V. = 0.6 97th percentile daily values = 2.43341 97th percentile 4 day average = 1.66379 97th percentile 30 day average= 1.20605 # < Q.L. = 0 Model used = BPJ Assumptions, type 2 data</p> <p>No Limit is required for this material</p> <p>The data are: 1,1,1,1,1,1,1</p>

Fact Sheet – VPDES Permit No. VA0025151 – Waynesboro WWTP

BASES FOR BIOSOLIDS LIMITATIONS AND MONITORING REQUIREMENTS

Metals Limitations & Monitoring

PARAMETER ⁽¹⁾	BASIS FOR LIMITS	LIMITATIONS		MONITORING REQUIREMENTS	
		Monthly Average (mg/kg) ⁽¹⁾⁽²⁾⁽³⁾	Maximum (mg/kg) ⁽¹⁾⁽²⁾⁽⁴⁾	Frequency ⁽⁵⁾	Sample Type
Arsenic	1	41	75	1/3 Months	Composite
Cadmium	1	39	85	1/3 Months	Composite
Copper	1	1,500	4,300	1/3 Months	Composite
Lead	1	300	840	1/3 Months	Composite
Mercury	1	17	57	1/3 Months	Composite
Molybdenum	1	NL ⁽⁶⁾	75	1/3 Months	Composite
Nickel	1	420	420	1/3 Months	Composite
Selenium	1	100	100	1/3 Months	Composite
Zinc	1	2,800	7,500	1/3 Months	Composite

NL = No Limit, monitoring required

1/3 Months = Sampling each calendar quarter with the results submitted by February 19th of each year

- (1) All parameters are subject to pollutant concentrations (PC), cumulative pollutant loading rates (CPLR), and ceiling limitations. PC biosolids contain the constituents identified above at concentrations below the monthly average specified in Part IV.A.2. CPLR biosolids contain the constituents identified above at concentrations above the monthly average and each sample must be below the ceiling limitations specified in Part IV.A.2.
- (2) All limits and criteria are expressed on a dry weight basis.
- (3) Monthly average shall be reported as the average of the results of all samples collected within a calendar month and analyzed using an approved method, in accordance with Part II.A.1-2 of the permit. For monitoring periods which include multiple months, if one sample is collected during the monitoring period, that result shall be reported as the monthly average. If samples are collected in multiple months during the monitoring period, a monthly average shall be calculated for each month in which samples were collected during the monitoring period and the highest monthly average reported. Individual results and calculations shall be submitted with the report.
- (4) The maximum concentration shall be reported as the highest single result from all samples collected and analyzed during a monitoring period.
- (5) The monitoring frequency may be increased during this permit term if DEQ deems it necessary.
- (6) The monthly average concentration for molybdenum is currently under study by USEPA. Research suggests that a monthly average molybdenum concentration below 40 mg/kg may be appropriate to reduce the risk of copper deficiency in grazing animals.

Bases for Limitations

1. VPDES Permit Regulation (9VAC25-31)

Fact Sheet – VPDES Permit No. VA0025151 – Waynesboro WWTP

Pathogen Reduction Requirements

BASIS FOR LIMITS	PATHOGEN REDUCTION ALTERNATIVE	PROCESS TO SIGNIFICANTLY REDUCE PATHOGENS (PSRP) OPTION	CLASS B PATHOGEN REDUCTION TREATMENT STANDARDS	MONITORING REQUIREMENTS ⁽¹⁾
1,2	1	NA	Fecal coliform monitoring: <2,000,000 MPN/gm or <2,000,000 CFU/gm, geometric mean of 7 samples (9VAC25-32-675.B.2)	1/3 Months ⁽²⁾
1,2	2	1	PSRP: Aerobic Digestion: Sludge mean cell residence time from 40 days at 20°C to 60 days at 15°C (9VAC25-32-675.D.1)	(3)
1,2	2	2	PSRP: Air dry in a drying bed for three months. Ambient average daily temperature must be above 0°C for 2 of the 3 months (9VAC25-32-675.D.2)	(3)
1,2	2	3	PSRP: Anaerobic digestion for a mean cell residence time between 15 days at 35°C - 55°C up to 60 days at 20°C (9VAC25-32-675.D.3)	(3)
1,2	2	4	PSRP: Composting at 40°C or above for 5 or more days, maintaining > 55°C for 4 consecutive hours during the 5 days (9VAC25-32-675.D.4)	(3)
1,2	2	5	PSRP: Sufficient lime is added to the sewage sludge to raise the pH of the sewage sludge to 12 after two hours of contact (9VAC25-32-675.D.5)	(3)
1,2	3	PROCESS AS APPROVED	Process equivalent to PSRP: PROCESS AS APPROVED (9VAC25-32-675 B.4.)	(3)

NA = Not applicable

1/3 Months = Sampling each calendar quarter with the results submitted by February 19th of each year

- (1) The monitoring frequency may be increased during this permit term if DEQ deems it necessary.
- (2) Between sampling events, operating records must demonstrate that the treatment facility is operating at a performance level known to meet pathogen reduction standards.
- (3) Process monitoring must be sufficient to demonstrate compliance with PSRP treatment requirements.

Bases for Requirements

1. VPDES Permit Regulation (9VAC25-31-710)
2. Environmental Regulations and Technology - Control of Pathogens and Vector Attraction Reduction in Sewage Sludge (EPA/625/R-92/013)

Fact Sheet – VPDES Permit No. VA0025151 – Waynesboro WWTP

Vector Attraction Reduction (VAR) Requirements

BASIS FOR LIMITS	VAR OPTION	VAR TREATMENT STANDARD	MONITORING REQUIREMENTS ⁽¹⁾
1,2	1	38% Reduction of volatile solids by digestion (9VAC25-32-685.B.1)	1/3 Months ⁽²⁾⁽³⁾
1,2	2	When 38% reduction is not achieved by anaerobic digestion, 40 day bench study at temperatures between 30°C and 37°C to demonstrate further reduction of volatile solids <17% (9VAC25-32-685.B.2)	1/3 Months ⁽²⁾⁽³⁾
1,2	3	When 38% reduction is not achieved by aerobic digestion, 30 day bench study at 20°C to demonstrate further reduction of volatile solids <15% (9VAC25-32-685.B.3)	1/3 Months ⁽²⁾⁽³⁾
1,2	4	Specific Oxygen Uptake Rate of ≤ 1.5 mg O ₂ /hour/gram total solids at 20°C (aerobically processed sludge) (9VAC25-32-685.B.4)	1/3 Months ⁽²⁾⁽³⁾
1,2	5	14 day aerobic process, temperatures above 40°C with an average temperature of >45°C (9VAC25-32-685.B.5)	(3)
1,2	6	Sufficient alkali is added to the sewage sludge to raise the pH of the sewage sludge to 12 S.U. or higher, and without the addition of more alkali, maintain the pH at 12 S.U. for two hours and then at 11.5 S.U. or higher for an additional 22 hours (9VAC25-32-685.B.6)	(3)
1,2	7	Where biosolids do not contain unstabilized solids from primary wastewater treatment, the percent solids of the biosolids shall be ≥ 75% (9VAC25-32-685.B.7)	1/3 Months ⁽²⁾⁽³⁾
1,2	8	Where biosolids contain unstabilized solids from primary wastewater treatment, the percent solids of the biosolids shall be ≥ 90% (9VAC25-32-685.B.8)	1/3 Months ⁽²⁾⁽³⁾
1,2	9	Sewage sludge shall be injected below the surface of the land (9VAC25-32-685.B.9)	NA ⁽⁴⁾
1,2	10	Sewage sludge land applied shall be incorporated into the soil within 6 hours after application (9VAC25-32-685.B.10)	NA ⁽⁴⁾

NA = Not applicable

1/3 Months = Sampling each calendar quarter with the results submitted by February 19th of each year

- (1) The monitoring frequency may be increased during this permit term if DEQ deems it necessary.
- (2) Between sampling events, operating records must demonstrate that the treatment facility is operating at a performance level known to meet VAR standards.
- (3) Process monitoring must be sufficient to demonstrate compliance with VAR treatment requirements.
- (4) If the selected VAR option 1- 8 is not met, the permittee shall provide notification to the land applier at the time the biosolids are delivered that the biosolids did not meet VAR at the treatment facility and that the biosolids must be injected or incorporated. The permittee shall obtain verification from the land applier that injection or incorporation occurred.

Bases for Requirements

1. VPDES Permit Regulation (9VAC25-31-720)
2. Environmental Regulations and Technology - Control of Pathogens and Vector Attraction Reduction in Sewage Sludge (EPA/625/R-92/013)

Fact Sheet – VPDES Permit No. VA0025151 – Waynesboro WWTP

APPENDIX C

BASES FOR PERMIT SPECIAL CONDITIONS

Tabulated below are the sections of the permit, with any changes and the reasons for the changes identified. Also provided is the basis for each of the permit special conditions.

Cover Page	<ul style="list-style-type: none">• Content and format as prescribed by the VPDES Permit Manual.• Facility name changed from Waynesboro STP to Waynesboro WWTP.
Part I.A	<p>Effluent Limitations and Monitoring Requirements – Outfall 002: Bases for effluent limits provided in previous pages of this fact sheet. Monitoring requirements are as prescribed by the VPDES Permit Manual.</p> <p><i>Updates Part I.A.2 of the previous permit with the following:</i></p> <ul style="list-style-type: none">• Changes were made to the format and introductory language.• The sampling frequency for CBOD₅ was changed from 1/Day to 5/Week.• The monthly average TSS limits were changed from 30 mg/L and 680 kg/d to 20 mg/L and 450 kg/d.• The maximum weekly average TSS limits were changed from 45 mg/L and 1000 kg/d to 30 mg/L and 680 kg/d.• Ammonia-N limits for the June to December season were added.• Monitoring for TN and Nitrate plus Nitrite was removed.• Definitions for 3/Week, 5/Week and 1/Year were added.• The footnote regarding 85% removal for TSS was removed.• The footnote regarding reporting TN as the sum of TKN and Nitrate plus Nitrite was removed.• The footnote regarding reporting Year to Date and Calendar Year concentrations as annual average values was removed.
Part I.B	<p>TRC and E. coli Limitations and Monitoring Requirements: <i>Updates Part I.D of the previous permit.</i></p> <p>If chlorination is chosen as a disinfection method:</p> <ul style="list-style-type: none">• The monthly average effluent TRC was changed from 0.039 mg/L to 0.036 mg/L.• The maximum weekly average effluent TRC was changed from 0.048 mg/L to 0.039 mg/L.• The effluent TRC monitoring frequency was changed from 1/Day to 12/Day.• The requirement that effluent TRC samples shall be taken with a minimum time separation of 90 minutes and a maximum time separation of 150 minutes was added.• The monitoring frequency for TRC in the CCT changed from once every 2 hours to 12/Day with a minimum time separation of 90 minutes and a maximum time separation of 150 minutes.• The E. coli monitoring frequency changed from 2/Month to 4/Month. <p>Required by Sewage Collection and Treatment (SCAT) Regulations and 9VAC25-260-170, Bacteria; other waters. Also, 40 CFR 122.41(e) requires the permittee, at all times, to properly operate and maintain all facilities and systems of treatment in order to comply with the permit. This ensures proper operation of chlorination equipment to maintain adequate disinfection.</p>
Part I.C	<p>Effluent Limitations and Monitoring Requirements – Additional Instructions: <i>Updates Part I.E of the previous permit with minor wording changes. Also, the QL for CBOD₅ was changed from 5 mg/L to 2 mg/L. Authorized by VPDES Permit Regulation, 9VAC25-31-190.J.4 and 220.I. This condition is necessary when a maximum level of quantification and/or a specific analytical method is required in order to assess compliance with a permit limit or to compare effluent quality with a numeric criterion. The condition also establishes protocols for calculation of reported values. Nutrient reporting calculations were updated. §62.1 44.19:13 of the Code of Virginia defines how annual nutrient loads are to be calculated; this is carried forward in 9VAC25-820-70. As annual concentrations are limited in the individual permit, this special condition is intended to reconcile the</i></p>

Fact Sheet – VPDES Permit No. VA0025151 – Waynesboro WWTP

	reporting calculations between the permit programs, as the permittee is collecting a single set of samples for the purpose of ascertaining compliance with two permits.
Part I.D	Pretreatment Program Requirements: <i>Updates Part I.F of the previous permit with minor wording changes.</i> VPDES Permit Regulation, 9VAC25-31-730 through 900, and 40 CFR Part 403 require certain existing and new sources of pollution to meet specified regulations.
Part I.E	Whole Effluent Toxicity (WET) Requirements: <i>Updates Part I.G of the previous permit with the removal of requirements for Outfall 001.</i> VPDES Permit Regulation, 9VAC25-31-210 and 220.I, requires monitoring in the permit to provide for and assure compliance with all applicable requirements of the State Water Control Law and the Clean Water Act.
Part I.F	Mercury Monitoring Requirement: <i>New requirement.</i> VPDES Permit Regulation 9VAC25-31-220.K requires use of best management practices where applicable to control or abate the discharge of pollutants when numeric effluent limits are infeasible or the practices are necessary to achieve effluent limit or to carry out the purpose and intent of the Clean Water Act and State Water Control Law.
Part I.G.1	95% Capacity Reopener: <i>Updates Part I.H.1 of the previous permit with minor wording changes.</i> Required by VPDES Permit Regulation, 9VAC25-31-200.B.4 for certain permits.
Part I.G.2	Indirect Dischargers: <i>Identical to Part I.H.2 of the previous permit.</i> Required by VPDES Permit Regulation, 9VAC25-31-200.B.1 for all STPs that receive waste from someone other than the owner of the treatment works.
Part I.G.3	Materials Handling/Storage: <i>Updates Part I.H.3 of the previous permit with minor wording changes.</i> 9VAC25-31-280.B.2. requires that the types and quantities of “wastes, fluids, or pollutants which are ... treated, stored, etc.” be addressed for all permitted facilities.
Part I.G.4	O&M Manual Requirement: <i>Updates Part I.H.4 of the previous permit with what is required to be included in an O&M Manual.</i> Required by Code of Virginia 62.1-44.19, SCAT Regulations 9VAC25-790, and VPDES Permit Regulation 9VA 25-31-190.E for all STPs.
Part I.G.5	CTC/CTO Requirement: <i>Identical to Part I.H.5 of the previous permit.</i> Required by Code of Virginia 62.1-44.19, SCAT Regulations 9VAC25-790, and VPDES Permit Regulation 9VAC25-31-190.E for all STPs.
Part I.G.6	Licensed Operator Requirement: <i>Updates Part I.H.7 of the previous permit with minor wording changes.</i> The VPDES Permit Regulation 9VAC25-31-200.C, the Code of Virginia 54.1-2300 et seq., and Rules and Regulations for Waterworks and Wastewater Works Operators 18VAC160-20-10 et seq., require licensure of operators.
Part I.G.7	Reliability Class: <i>Identical to Part I.H.8 of the previous permit.</i> Required by SCAT Regulations 9VAC25-790.
Part I.G.8	Water Quality Criteria Monitoring: <i>Updates Part I.H.9 of the previous permit with the removal of requirements for Outfall 001.</i> State Water Control Law at 62.1-44.21 authorizes the Board to request information needed to determine the discharge’s impact on State waters. States are required to review data on discharges to identify actual or potential toxicity problems, or the attainment of water quality goals, according to 40 CFR Part 131, Water Quality Standards, Subpart 131.11. To ensure that water quality criteria are maintained, the permittee is required to analyze the facility’s effluent for the substances noted in Attachment A of this VPDES permit.
Part I.G.9	Treatment Works Closure Plan: <i>Updates Part I.H.10 of the previous permit with minor wording changes.</i> Required for all STPs per the State Water Control Law at 62.1-44.18.C and 62.1-44.15:1.1, and the SCAT Regulations at 9VAC25-790-450.E and 9VAC25-790-120.E.3.

Fact Sheet – VPDES Permit No. VA0025151 – Waynesboro WWTP

Part I.G.10	<p>Reopeners:</p> <p>a. <i>Identical to Part I.H.11.a of the previous permit:</i> Section 303(d) of the Clean Water Act requires that total maximum daily loads (TMDLs) be developed for streams listed as impaired. This special condition is to allow the permit to be reopened if necessary to bring it into compliance with any applicable TMDL approved for the receiving stream. The reopener recognizes that, according to section 402(o)(1) of the Clean Water Act, limits and/or conditions may be either more or less stringent than those contained in this permit. Specifically, they can be relaxed if they are the result of a TMDL, basin plan, or other wasteload allocation prepared under section 303 of the Act.</p> <p>b. <i>Identical to Part I.H.11.b of the previous permit:</i> 9VAC25-40-70 A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade.</p> <p>c. <i>Updates Part I.H.11.c of the previous permit:</i> 9VAC25-31-390 A authorizes DEQ to modify VPDES permits to promulgate amended water quality standards.</p>
Part I.G.11	<p>Suspension of concentration limits for E3/E4 facilities: <i>Updates Part I.H.13 of the previous permit with minor wording changes.</i> 9VAC25-40-70 B authorizes DEQ to approve an alternate compliance method to the technology-based effluent concentration limitations as required by subsection A of this section. Such alternate compliance method shall be incorporated into the permit of an Exemplary Environmental Enterprise (E3) facility or an Extraordinary Environmental Enterprise (E4) facility to allow the suspension of applicable technology-based effluent concentration limitations during the period the E3 or E4 facility has a fully implemented environmental management system that includes operation of installed nutrient removal technologies at the treatment efficiency levels for which they were designed.</p>
Part II	<p>Conditions Applicable to All VPDES Permits: <i>Updates Part II of previous permit.</i> VPDES Permit Regulation 9VAC25-31-190 requires all VPDES permits to contain or specifically cite the conditions listed.</p>
Part III.A.1	<p>Annual Production Monitoring: <i>New Requirement.</i> 9VAC25-31.220.I.4 specifies that each permit shall include monitoring requirements for sewage sludge to assure compliance with permit limits.</p>
Part III.A.2	<p>Metals Limitations & Monitoring: <i>New Requirement.</i> Bases for limits and monitoring requirements provided in Appendix B of this fact sheet.</p>
Part III.A.3	<p>Pathogen Reduction Requirements: <i>New Requirement.</i> Bases for requirements provided in Appendix B of this fact sheet.</p>
Part III.A.4	<p>VAR Requirements: <i>New Requirement.</i> Bases for requirements provided in Appendix B of this fact sheet.</p>
Part III.B.1	<p>Approved Sources of Biosolids: <i>New Requirement.</i> 9VAC25-32-440.D states, “No person shall land apply, market, or distribute biosolids in Virginia unless the biosolids source has been approved by the board.” 9VAC25-32-510.B and C require sewage sludge to be treated to meet biosolids standards prior to delivery to the land application site.</p>
Part III.B.2	<p>Annual Report: <i>New Requirement.</i> 9VAC25-31-590.A requires the submittal of an annual report postmarked by February 19 for the previous year. 9VAC25-31-220.I.3. provides for the VPDES permit to require monitoring the volume of biosolids and other measurements as appropriate. 9VAC25-31-590.C requires reports be maintained verifying that sludge treatment for pathogen and vector attraction reduction be maintained by the generator and owner (of the permit). 9VAC25-31-190.H. requires the permittee to submit information requested by the board, within a reasonable time, to determine compliance with the permit. Other specific information and maintenance requirements are identified in 9VAC25-20-147.A.</p>

Fact Sheet – VPDES Permit No. VA0025151 – Waynesboro WWTP

Part III.B.3	Recordkeeping: <i>Updates Part I.H.6 of the previous permit.</i> 9VAC25-31-580 outlines record keeping requirements for biosolids. 9VAC25-31-190.J requires all records pertaining to biosolids to be maintained for 5 years, including monitoring information, copies of all reports required by the permit and data used to develop the permit application.
Part III.B.4	Generator NANI: <i>New Requirement.</i> 9VAC25-31-530.F requires the generator of biosolids who provides biosolids to a land applier, to give notice and necessary information to the land applier. 9VAC25-31-480 states that the preparer of biosolids shall ensure that the applicable requirements in 9VAC25-31 Part VI are met when biosolids are land applied. 9VAC25-31-530.F requires that when the preparer of biosolids gives his biosolids to another person who prepares biosolids, the person who provides the biosolids give the person who receives the biosolids notice and necessary information to comply with 9VAC25-31 Part VI.
Part III.B.5	Biosolids Management Plan (BSMP): <i>New Requirement.</i> 9VAC25-31-485.G requires the permit holder to maintain and implement a BSMP and specifies its components. In addition to all materials submitted with permit application, which includes an Odor Control Plan (OCP), a Nutrient Management Plan (NMP) and O&M Manual are required. 9VAC25-31-485.G.3, 9VAC25-790-140 and 9VAC25-790-260 – 300 identify minimum requirements to be included in an O&M Manual. Additional requirements are included in 9VAC25-31-100.Q.12. 9VAC25-31-100.Q.6.requires Generator’s OCP and minimum content.
Part III.B.6.	Reopener: <i>Identical to Part I.H.11.d of the previous permit.</i> 9VAC25-31-220.C requires inclusion of a reopener clause in the permit to authorize immediate modification of the permit to address changes to standards or requirements for the use or disposal of biosolids, industrial wastewater sludge, or septage.

DELETIONS

Tabulated below are the sections of the previous permit that were deleted and the basis for this action.

Part I.A.1	Effluent Limitations and Monitoring Requirements – 4.0 MGD: The 4.0 MGD flow tier is no longer needed since the facility has received a CTO for the 6.0 MGD facility.
Part I.B	Interim Limit and Schedule of Compliance: The permittee is in compliance with the TP loading limit so the compliance schedule is no longer required.
Part I.C	Additional TRC Limitations and Monitoring Requirements – Outfall 001: Outfall 001 is no longer used.
Part I.H.12.	Offset Special Condition: An offset plan for TN and TP is on file at DEQ; therefore, the requirement to submit an offset plan is not required.
Part I.H.14.	Stormwater Management: The 6.0 MGD facility is now in operation and a NEC has been submitted; therefore, the special condition addressing stormwater requirements for the 6.0 MGD facility is no longer necessary.